ZOLTAN
KORCSOK

Read our latest in-depth interview with the multi-talented 3D Artist and Matte Painter, Zoltan Korcsok

ARTICLES
Maya brings animals to life for Fido, plus more!

INTERVIEWS
Marco Edel Rolandi, Eric Provan and Zoltan Korcsok

GALLERIES
Patrick Beaulieu, Jordan Walker and Matt Roussel, plus more!
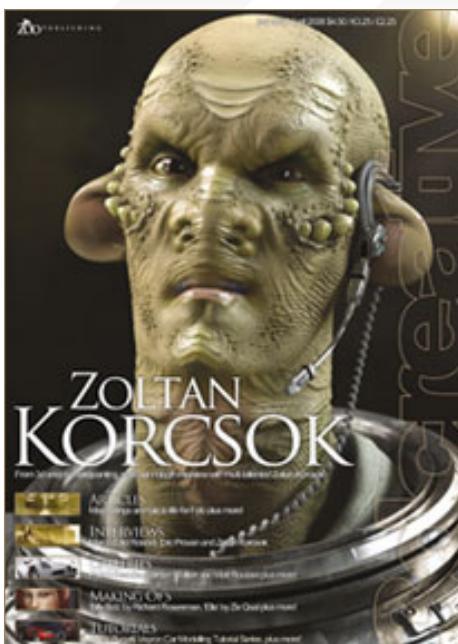
MAKING OF'S
'Billy Bob' by Richard Rosenman, 'Ella' by Ziv Qual, plus more!

TUTORIALS
NEW: Bugatti Veyron Car Modelling Tutorial Series, plus more!

EDITORIAL

Welcome to ISSUE 032 of 3DCreative. First of all, a little note to all our LightWave artists out there as I understand you're all raring to get stuck into Parts 3 and 4 of our Bugati Veyron Car Modelling Series... Please refer to PAGE 138 for full details about this, but in short we are now going to be bringing you Parts 3, 4 *and* 5 in the May issue of 3DCreative magazine in order to bring the series back up to date for June and July. Vojislav Milanovic is currently working very hard to bring the tutorial series back on track for us, as unfortunately Craig A. Clark has had to pull out of the series for reasons beyond his control. We do hope you'll all be sticking with us to see the tutorial through to the end with Vojislav, and we do apologise for the change in the original schedule – hopefully the "bumper" May issue will cheer all you LightWavers up, anyway! Back to this month's issue: we have 3 really great interviews for you, featuring the talents and wisdoms of Marco Edel Rolandi (PAGE 009), Eric Provan (PAGE 020) and Zoltan Korcsok (PAGE 028). For all you ZBrushers, Wayne Robson is still going strong with his fantastic Beginners Guide to ZBrush – now on Part 3 (of 7), so be sure to catch up with Wayne's advice in this month's instalment... A little birdy, by the name of Wayne, has also told me that he is creating a video for this tutorial series which we hope to be making available for download with the last part of the series, so that's another nice little treat to be looking forward to in the coming months. As always we bring you more great little Making Ofs this month, too! Be sure to check out the Making Of 'Billy Bob Boone' as Richard Rosenman really has put together a great project overview for us, so hop on over to PAGE 082 for some tips from the trade! Well, I'm running out of Editorial space so enjoy this month's issue and don't forget to send me your images! ENJOY!! ED.

FREE STUFF!
Wherever you see this symbol, click it to download resources, extras and even movies!!

Issue032 April 2008 $4.50 / €3.25 / £2.25

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From 3d artist to mattepainting, read our indepth interview with multi tallented Zoltan Korcsok

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Get the most out of your Magazine!

If you're having problems viewing the double-page spreads that we feature in this magazine, follow this handy little guide on how to set up your PDF reader!
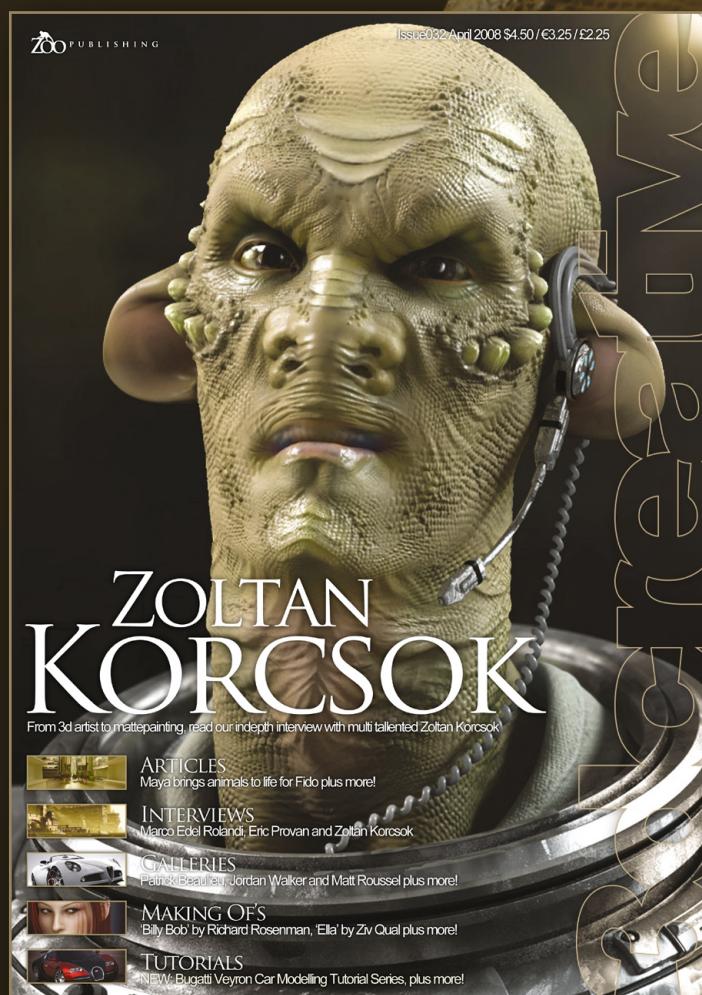
SETTING UP YOUR PDF READER

For optimum viewing of the magazine, it is recommended that you have the latest Acrobat Reader installed. You can download it for free, here: DOWNLOAD!

To view the many double-page spreads featured in 2DArtist magazine, you can set the reader to display 'two-up', which will show double-page spreads as one large landscape image:

1. Open the magazine in Reader;
2. Go to the VIEW menu, then PAGE DISPLAY;
3. Select TWO-UP CONTINUOUS, making sure that SHOW COVER PAGE is also selected.

That's it!
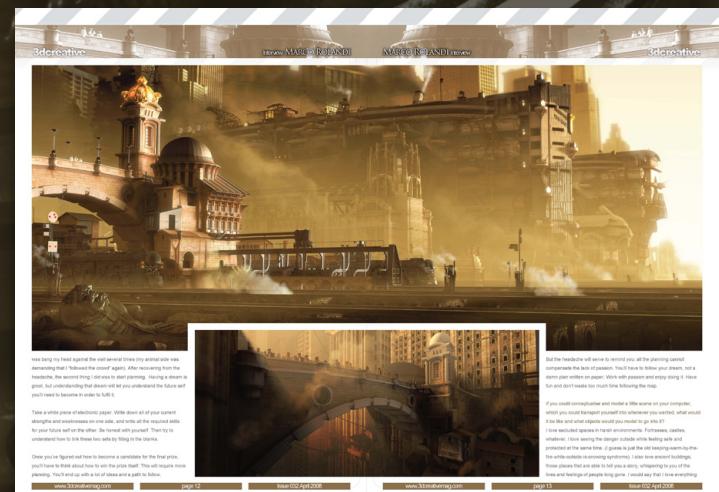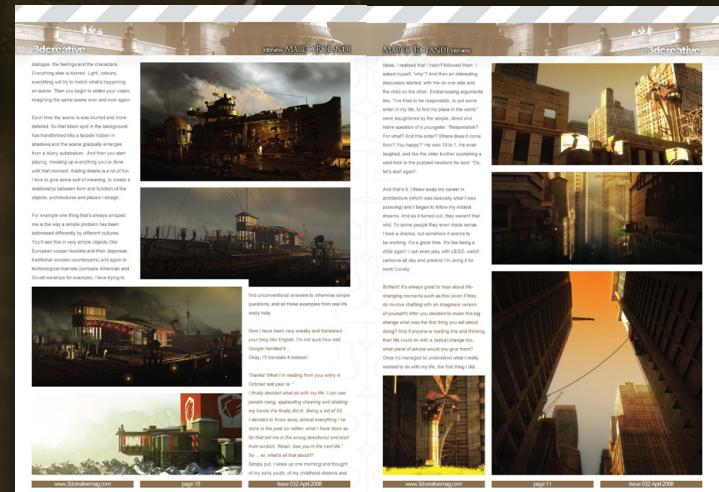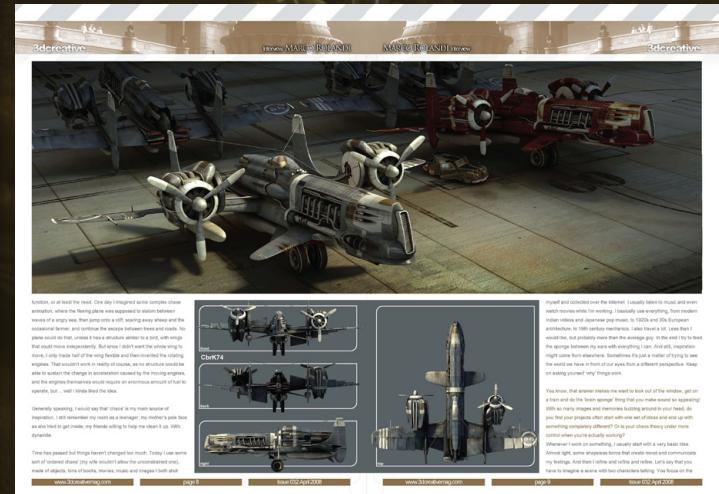
CONTRIBUTING ARTISTS

Every month, many creative and talented artists from around the world contribute to 3DCreative Magazine. Here you can read all about them. If you would like to be a part of 3DCreative or 2DArtist Magazines, please contact lynette@zoopublishing.com.

Our new car modelling tutorial series, Bugatti Veryon, brings a group of new talented artists to 3DCreative Magazine. These wonderful people are responsible for creating our 3ds Max, Cinema 4D, LightWave, Maya & Softimage XSi content this month!

ALI ISMAIL

is a 3D artist who has worked on everything from Hollywood movies to TV commercials to games. He started out by doing the first 3D games in Jordan, then freelanced to clients such as Microsoft and VW, and has also worked for ILM on projects such as Indiana Jones and the Kingdom of the Crystal Skull whilst at Lucasfilm Animation Singapore.

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ANDREW HOBSON

has been using 3D software for about 4-5 years, mainly as a hobby, and enjoys developing his skills through various tutorials and courses. He's most proficient at modelling, especially vehicles, but is looking to develop his organic modelling, particularly humans/fantasy figures. He would love to work in the film or games industry (especially on the Nintendo Wii) so he can develop his skills.

andrewhobson2@gmail.com
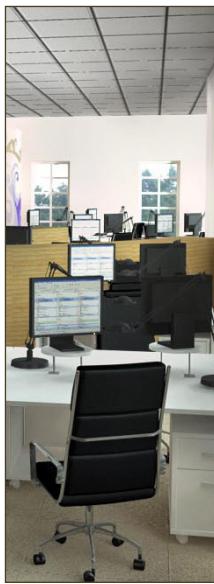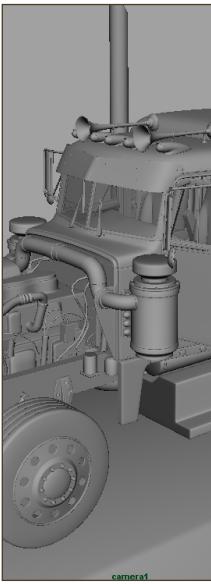
EMLYN DAVIES

is a 27 year old freelance 3D artist, based in Birmingham, UK. He has four years experience in Cinema 4D and has freelanced mainly at Cadbury as a 3D consultant for most of his professional career. Passionate about all things 3D, he constantly strives to develop his expertise and blur the boundaries between the real and the digital world.
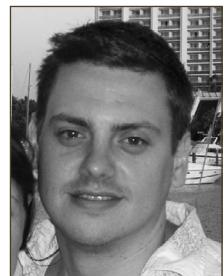
http://www.cr8ivity.co.uk   info@cr8ivity.co.uk

KRISZTIÁN SZEIBOLD

is a 3D Artist living in Budapest, Hungary. In 2000, he started using 3D software such as 3D Studio R4, and later 3ds Max and Maya. He's currently working as a 3D Artist on post-productions and commercials with Softimage XSI and Fusion. He hopes that he's going to be able to work on feature films in the future.

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szkoryon@gmail.com

WOULD YOU LIKE TO CONTRIBUTE TO 3DCREATIVE OR 2DARTIST MAGAZINE?

We are always looking for tutorial artists, gallery submissions, potential interviewees, Making Of writers and more. For more information, send a link to your work here: **lynette@zoopublishing.com**

ERIC PROVAN

is a Modeller and Texture Artist. He's been working in the CG industry for a little over two and a half years now and is currently employed by Sony Pictures Imageworks as a Modeller. He's extremely passionate about 3D art and looks forward to spending the rest of his days creating weird and kooky things!

eric_provan@yahoo.com   www.ericprovan.com

ZOLTÁN KORCSOK

graduated from the Moholy-Nagy University of Art and Design as a Designer in Visual Communication Arts (MA). He's currently a freelance 3D Artist, Illustrator and Book Designer who has been working in the games industry since the 90s. He's a modo beta tester with experience in many other 3D software: ZBrush, Cinema 4D, Maya, Silo.

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MARIO NOGUEIRA

is 30 years old and is currently working with AutoCAD, making Blueprints for houses and buildings. He's worked in 3D Architectural Visualisation with 3ds Max since 2004, when he started making visualisations for clients. He doesn't have a current "dream job" at the moment, but in the near future, who knows! 3D is, for Mario, not a job but a passion.

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ZIV QUAL

is the 3D department manager of MDSimulation, a company that makes realistic graphical simulations in the medical field for some of the best medical professionals around the world. He also works as an instructor at Shenkar, a high design school. Ziv was also the Grand Prize winner of the CGsociety.com Spectacular contest with his image 'Rage over Babylon'.

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SILVATICUS

has enjoyed drawing since he was a kid and has always spent time doing it. It became more serious three years ago when he started learning ZBrush and got addicted. He doesn't have any precise goals with his work besides becoming good enough to be able to express his thoughts and feelings through his art.

deathcultlodge@yahoo.com

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3DCreative is in danger of becoming obsolete… but you can save us! Yes, you!! You can help us by making sure that you buy our magazines rather than downloading them for free from dodgy sites, and by not distributing them to friends, co-workers and family! Let 'em buy their own – they're only $4.50 after all, which is what, the price of a beer? And let's face it: this mag is much tastier, mmmm mmmm mmmm!!!!

Seriously: don't be tempted by the pirates!! We've already lost one metaphorical eye - don't let us lose both or we won't be able to create these content-packed mags for you anymore. And who wants that? Not us, that's for sure!

Every £, $ or € that we make from 3DCreative sales go straight back into investing quality content for the mag – yep, all of it! We're a small company and these mags are not made for profit. Who are we making these mags for? You!! So help us by spreading the word and we'll continue to bring you 3D goodness for years to come. Don't help? And, well… pirates are mean, huh?

"I WOKE UP ONE MORNING AND
THOUGHT OF MY EARLY YOUTH,
OF MY CHILDHOOD DREAMS
AND IDEAS. I REALISED THAT
I HADN'T FOLLOWED THEM. I
ASKED MYSELF: WHY?..."

MARCO ROLANDI

Marco describes himself as a Freelance Concept Artist working in Turin, Italy. Initially he pursued a career in architectural visualization, but one day all that changed and now his imagination is the only limit of his creations! Read on....
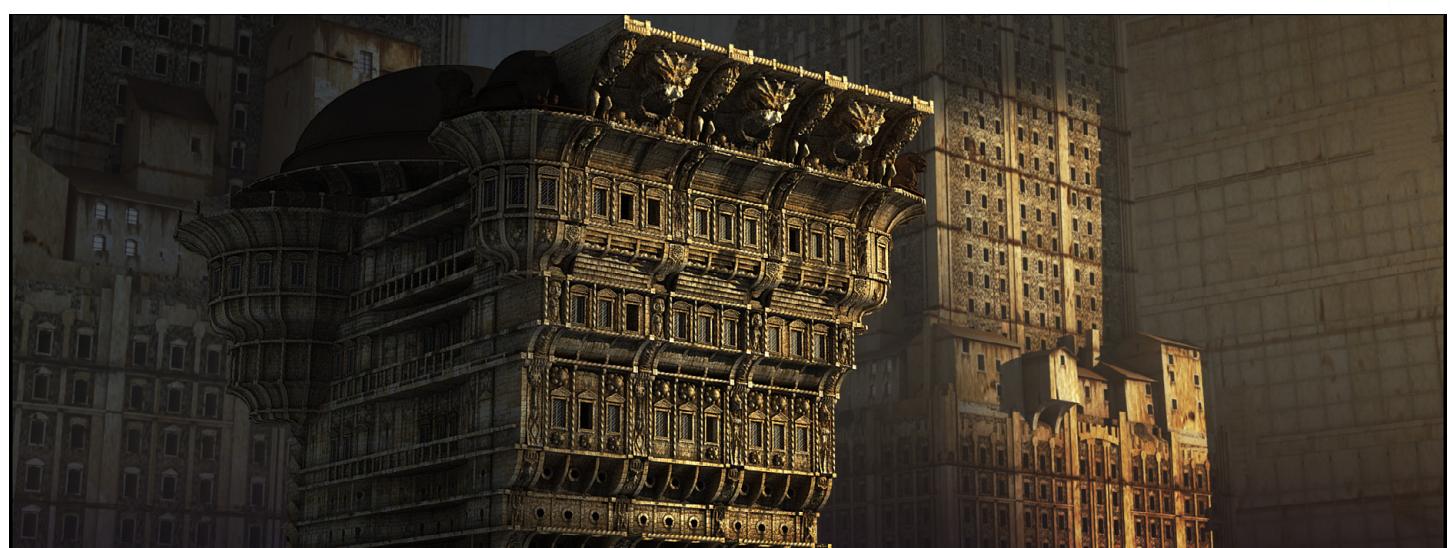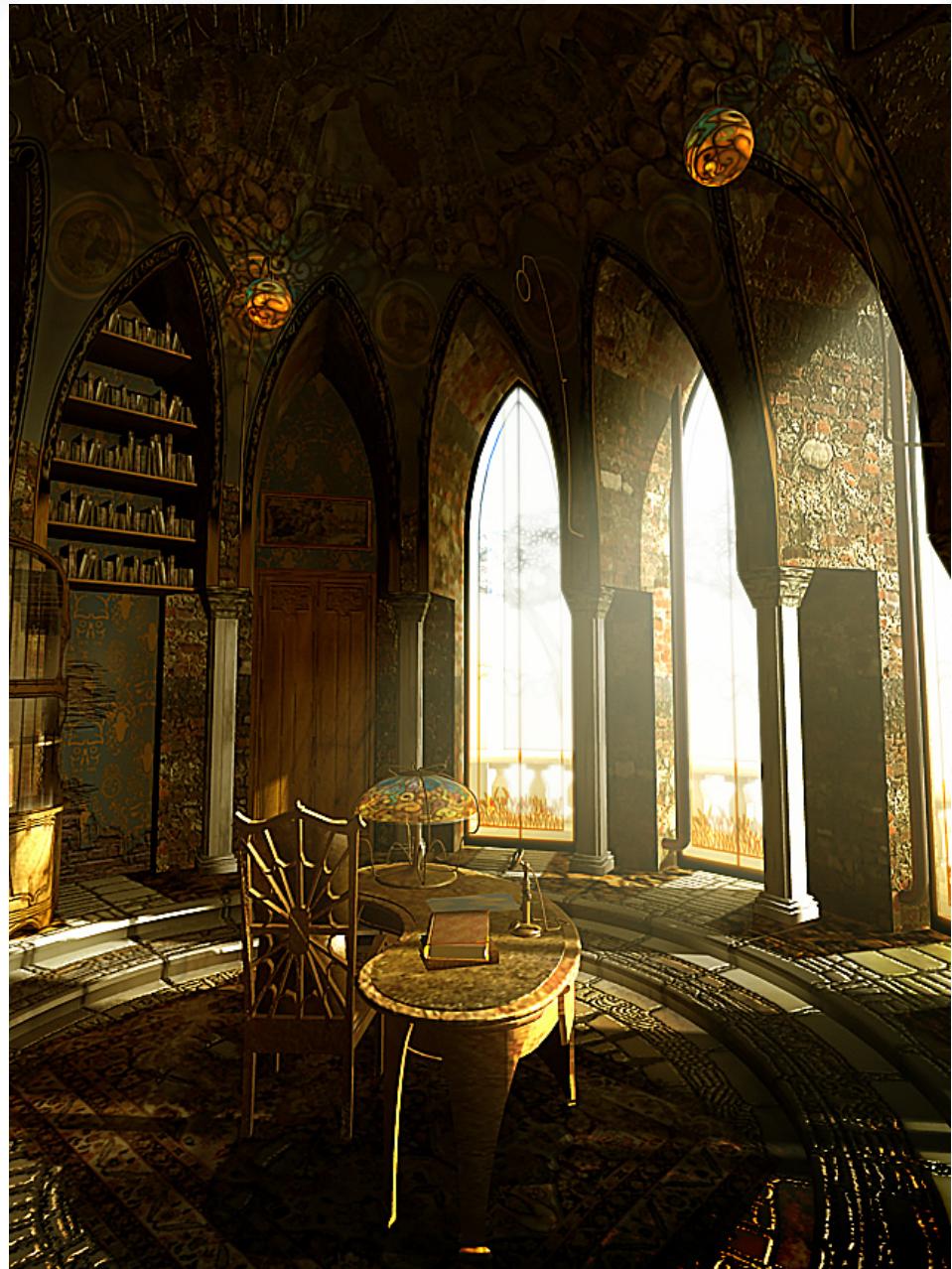
MARCO ROLANDI

Marco! How are things going? Thanks for this opportunity to pick your brains! Now then, you describe yourself as a freelance concept artist - that's all very well and good but what I want to know is how do your friends and family describe you?

Straight and personal from the start - next question! Just kidding. First, thank you for giving me the opportunity to talk a bit about myself. Speaking of which, while I have lots of friends, only a few of them really know me for what I am. Especially when we talk about the things I do for living. There is one thing all of them seem to agree on though: I'm a dreamer. Which, for them, means I'm basically a naïve asocial nerd living in a parallel world made of "my stuff". Of course I beg to differ; it's obviously them (and not me) that are living in their small nutshells and missing out on the whole picture!

Is there a typical job or client that you get often, and what would this work involve?

Well my answer's not exactly interesting because I don't really know. I've been working with architectural studios for too long and even if

I have worked on a lot of things (toys, videogames, comics) there's really nothing that ended up being outstanding. Things are changing though; I'm moving to L.A. later this year to begin working at Blur Studio, and before that I'll be going to Rajasthan (India) for a movie that I'm doing some concept art and 3D modelling for. But I don't really like to talk about these things. They're still in the future, anything can go wrong and I want to wait and see how they turn out first.

Sorry, that last question was pretty dull - well done for getting an interesting answer out of it! It does sound like you have some really exciting times ahead, but as you say let's leave them for the future. Can you tell us a little bit about you came to be 'discovered' by such high profile employers?

The question wasn't dull at all, but the answer might have been, especially considering the kind of work I've done in the past 13 years! So ... how did
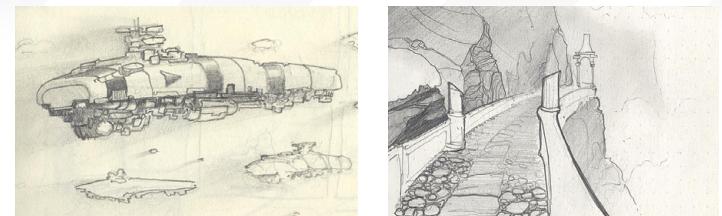
I get out of my little, dark room with no windows? Sheer luck I guess! And a lot of help from the Internet. What is really wonderful these days, is the sheer power you have to show your work to millions of people at a click of your mouse. That was absolutely impossible some 10 years ago. Today you can drop a line to one studio executive and say, "Hey, here's my work. Maybe you've seen this on the xyz website. Interested?".

But then again, I have been lucky because they called me. Which, in the end, really shows that some of the high profile employers (at least the most open minded and dynamic ones) keep on watching the Internet, both as a means of employment, and as a way of keeping up with the industry. Tutorials for textures collections and publications in books helped as well, especially because it gave me the chance to show any potential employers the way I work.

Your designs are awesome! My favourite of all is the "airplane CbrK74 model" - I absolutely love the mix of futuristic and retro elements. Where did this design come from, and how do you start with a project like this? Is it just ideas in your head, references and inspirations?

The design for the CbrK74 is quite old, and I would say form follows

function, or at least the need. One day I imagined some complex chase animation, where the fleeing plane was supposed to slalom between waves of a angry sea, then jump onto a cliff, scaring away sheep and the occasional farmer, and continue the escape between trees and roads. No plane could do that, unless it has a structure similar to a bird, with wings that could move independently. But since I didn't want the whole wing to move, I only made half of the wing flexible and then invented the rotating engines. That wouldn't work in reality of course, as no structure would be able to sustain the change in acceleration caused by the moving engines, and the engines themselves would require an enormous amount of fuel to operate, but ... well I kinda liked the idea.

Generally speaking, I would say that 'chaos' is my main source of inspiration. I still remember my room as a teenager; my mother's pale face as she tried to get inside; my friends willing to help me clean it up. With dynamite.

Time has passed but things haven't changed too much. Today I use some sort of 'ordered chaos' (my wife wouldn't allow the unconstrained one), made of objects, tons of books, movies, music and images I both shot

CbrK74
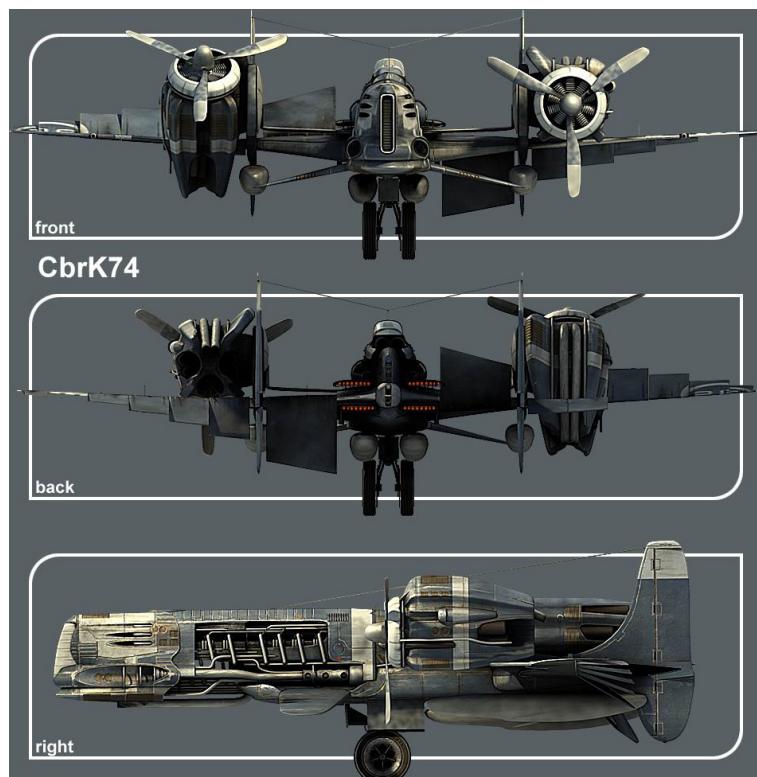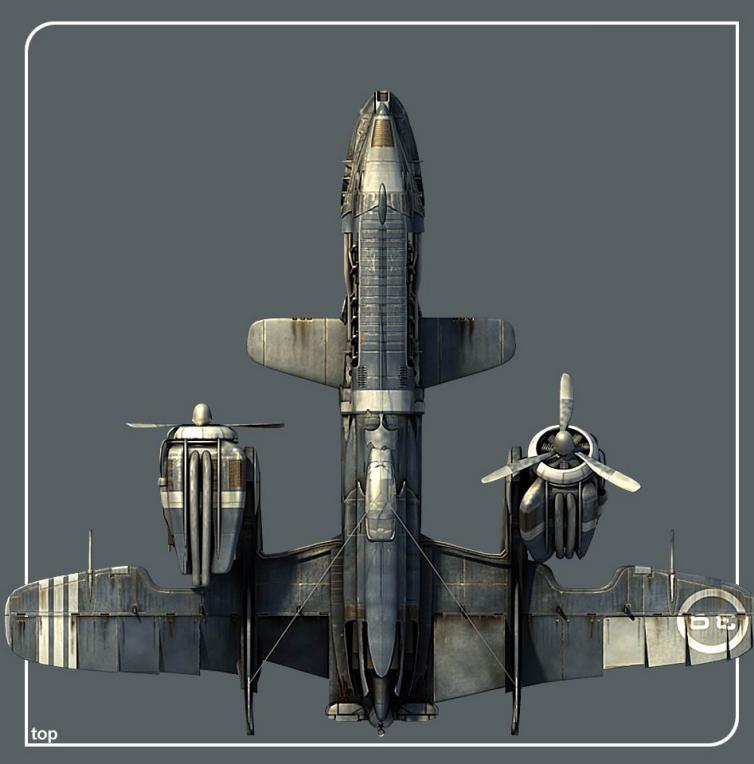
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myself and collected over the Internet. I usually listen to music and even watch movies while I'm working. I basically use everything, from modern Indian videos and Japanese pop music, to 1920s and 30s European architecture, to 19th century mechanics. I also travel a lot. Less than I would like, but probably more than the average guy. In the end I try to feed the sponge between my ears with everything I can. And still, inspiration might come from elsewhere. Sometimes it's just a matter of trying to see the world we have in front of our eyes from a different perspective. Keep on asking yourself 'why' things work.

You know, that answer makes me want to look out of the window, get on a train and do the 'brain sponge' thing that you make sound so appealing! With so many images and memories buzzing around in your head, do you find your projects often start with one set of ideas and end up with something completely different? Or is your chaos theory under more control when you're actually working?
Whenever I work on something, I usually start with a very basic idea. Almost light, some shapeless forms that create mood and communicate my feelings. And then I refine and refine and refine. Let's say that you have to imagine a scene with two characters talking. You focus on the

dialogue, the feelings and the characters. Everything else is blurred. Light, colours, everything will try to match what's happening on scene. Then you begin to widen your vision, imagining the same scene over and over again.

Each time the scene is less blurred and more detailed. So that black spot in the background has transformed into a facade hidden in shadows and the scene gradually emerges from a blurry substratum. And then you start playing, messing up everything you've done until that moment. Adding details is a lot of fun. I love to give some sort of meaning, to create a relationship between form and function of the objects, architectures and places I design.

For example one thing that's always amazed me is the way a simple problem has been addressed differently by different cultures. You'll see this in very simple objects (like European copper buckets and their Japanese traditional wooden counterparts) and again in technological marvels (compare American and Soviet warships for example). I love trying to

find unconventional answers to otherwise simple questions, and all these examples from real life really help.

Now I have been very sneaky and translated your blog into English. I'm not sure how well Google handled it ...
Okay, I'll translate it instead!

Thanks! What I'm reading from your entry in October last year is: "
I finally decided what do with my life. I can see people rising, applauding cheering and shaking my hands (he finally did it). Being a kid of 33, I decided to throw away almost everything I've done in the past (or rather, what I have done so far that led me in the wrong directions) and start from scratch. Reset. See you in the next life."
So ... er, what's all that about!?
Simply put, I woke up one morning and thought of my early youth, of my childhood dreams and

ideas. I realised that I hadn't followed them. I asked myself, "why"? And then an interesting discussion started, with me on one side and the child on the other. Embarrassing arguments like, "I've tried to be responsible, to put some order in my life, to find my place in the world," were slaughtered by the simple, direct and naïve question of a youngster: "Responsible? For what? And this order? Where does it come from? You happy?" He won 10 to 1. He even laughed, and like the older brother explaining a card trick to the puzzled newborn he said: "Ok, let's start again".

And that's it. I threw away my career in architecture (which was basically what I was pursuing) and I began to follow my wildest dreams. And as it turned out, they weren't that wild. To some people they even made sense. I took a chance, but somehow it seems to be working. It's a great time. It's like being a child again! I can even play with LEGO, watch cartoons all day and pretend I'm doing it for work! Lovely.

Brilliant! It's always great to hear about life-changing moments such as this (even if they do involve chatting with an imaginary version of yourself!) After you decided to make this big change what was the first thing you set about doing? And if anyone is reading this and thinking their life could do with a radical change too, what piece of advice would you give them? Once I'd managed to understand what I really wanted to do with my life, the first thing I did
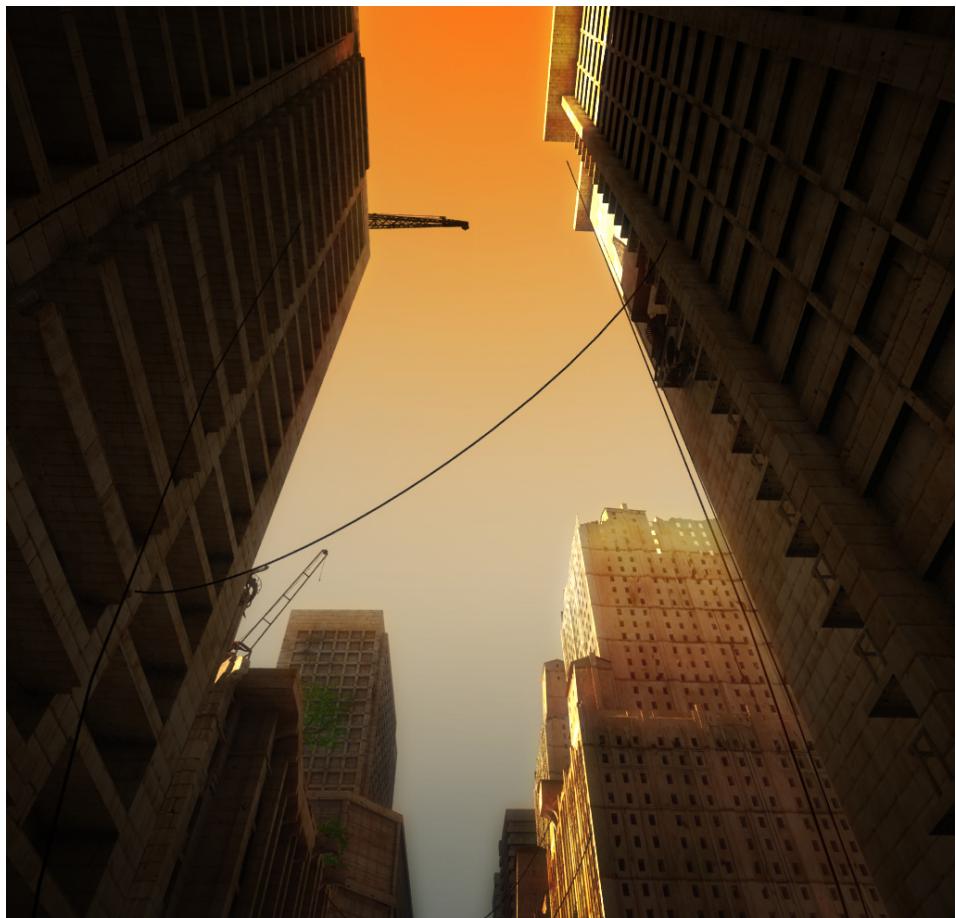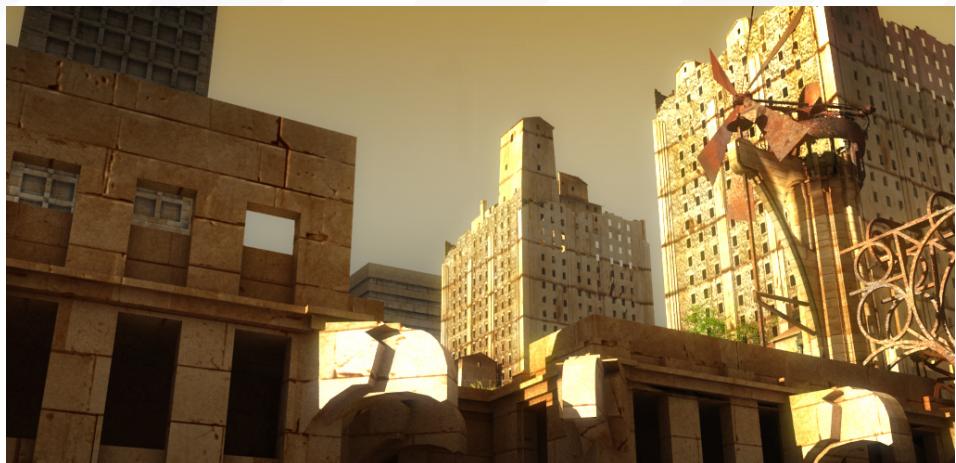
was bang my head against the wall several times (my animal side was demanding that I "followed the crowd" again). After recovering from the headache, the second thing I did was to start planning. Having a dream is great, but understanding that dream will let you understand the future self you'll need to become in order to fulfil it.

Take a white piece of electronic paper. Write down all of your current strengths and weaknesses on one side, and write all the required skills for your future self on the other. Be honest with yourself. Then try to understand how to link these two sets by filling in the blanks.

Once you've figured out how to become a candidate for the final prize, you'll have to think about how to win the prize itself. This will require more planning. You'll end up with a lot of ideas and a path to follow.
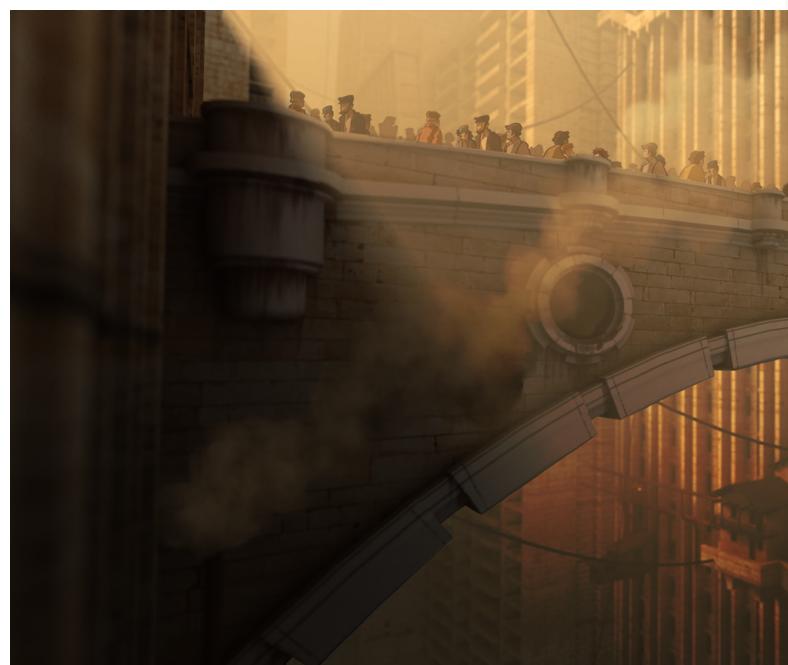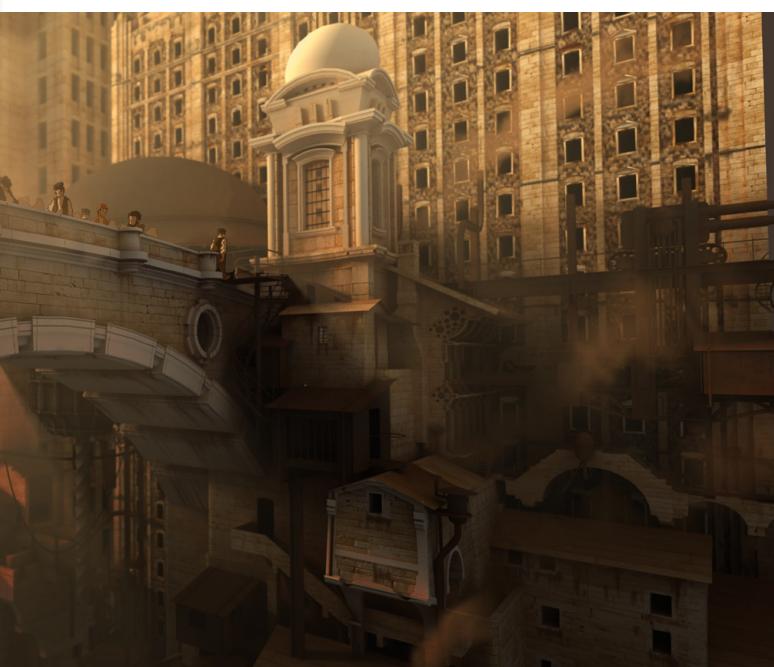
But the headache will serve to remind you: all the planning cannot compensate the lack of passion. You'll have to follow your dream, not a damn plan written on paper. Work with passion and enjoy doing it. Have fun and don't waste too much time following the map.

If you could conceptualise and model a little scene on your computer, which you could transport yourself into whenever you wanted, what would it be like and what objects would you model to go into it?
I love secluded spaces in harsh environments. Fortresses, castles, whatever. I love seeing the danger outside while feeling safe and protected at the same time. (I guess is just the old keeping-warm-by-the-fire-while-outside-is-snowing syndrome). I also love ancient buildings; those places that are able to tell you a story, whispering to you of the lives and feelings of people long gone. I would say that I love everything

that lets you feel something and tells you a story. If I had to invent something right now, I'd like to stay in the long-abandoned library of an ancient fortress carved directly into a cliff. Where I could hear the waves roaring fifty metres below and feel the chill as the cool wind came in through the carved windows. I would begin by creating the room, the carved bookshelves (everything is made of rock in here) and a large bow-window. Set a orange reddish light coming from a fireplace and then begin modelling the exterior. I would do one cliff, adding decorations and windows on top of it.

What are your hopes and dreams for the future?
I guess my hopes are absolutely lame and common. I hope to be able to communicate with others using my work - plain and simple. Sounds strange, but even in a world of total communication it's still rather difficult

with the usual difference between hearing and listening. On the other hand, my dreams ... well my dreams are just too wild to confess. Really. And I probably have too many for a single lifetime. I honestly believe dreams are like the sun that sets behind the horizon. Something we couldn't live without and we'll always ride towards, but at the same time impossible if not dangerous to reach. What's fun is in the ride. And I'm having it all.

MARCO ROLANDI

For more work by this artist please visit:

http://www.marcorolandi.com

Or contact them at:

public@marcorolandi.com

Interviewed by: Tom Greenway

ERIC PROVAN

Talk about a career taking off! Eric's journey over the last few years has blasted him through some of the biggest named companies out there. We quiz him about how he's achieved this, how he comes up with those whacky characters and the real reason behind his girlfriend's high heels!

ERIC PROVAN

Hi Eric! Just browsing through your site http://www.ericprovan.com and what's this? A new demo reel! [Clicks download]. Okay, I'm told it will be here in 11 mins and 30 secs so we can talk about that later. For now let's start by hearing a little bit about yourself.

Hey Tom. First off, thanks for this opportunity. I'm truly honored. Okay, where to start? I am Spartacus, err Eric Provan. I currently live in LA with my radical girlfriend Holly, and my slightly less radical three-legged cat, Keek. Since graduating from Fullsail in June of 05, I have worked at 2Ksports - Kush Games, The Jim Henson Creature Shop, and I am currently working at Sony Pictures Imageworks as a modeler. When I'm not creating things, you can find me strumming my guitar, eating pizza, watching Arrested Development, beating up little kids, and sometimes doing them all at the same time!
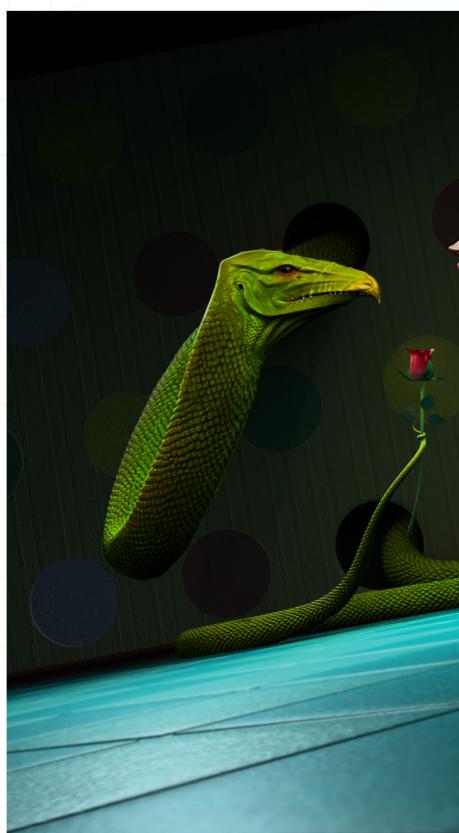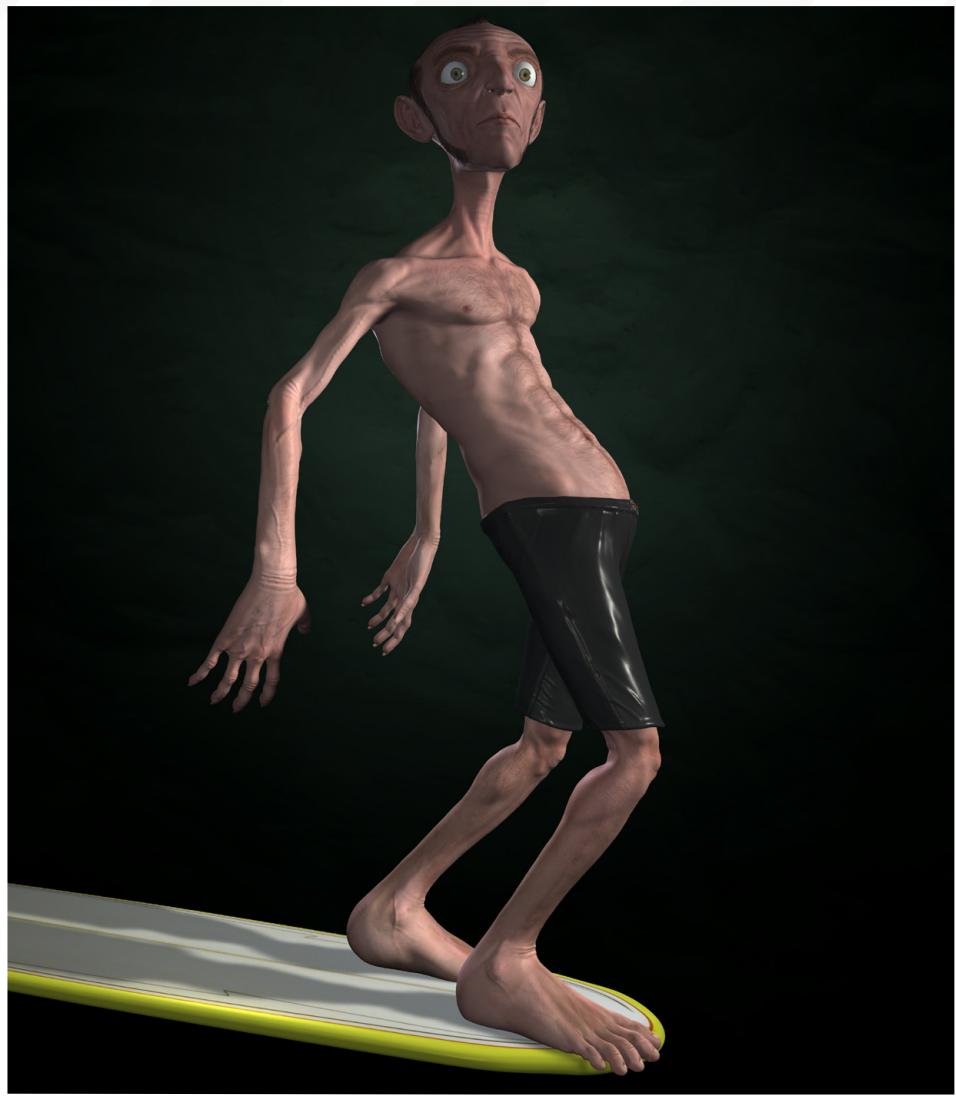
That's a pretty busy 3 years! What's been the most memorable moment that's come out of working for all those fantastic companies? And is there any one event that really boosted your career forward?

Ah man, tough question. It would be impossible to pick just one moment. I have been so lucky in my career so far. 2KSports - Kush games took a huge chance on me, and for that I will be forever grateful. The Jim Henson Creature Shop gave me the rare chance to work under the name of one of my hero's. Sony Imageworks, well, Sony Imageworks is Sony Imageworks! The trip so far has been a surreal one. I'm keeping my fingers crossed that it will continue to be so fun.

Honestly, I think the biggest boost in my career so far have been the jobs that I didn't land, the interviews that didn't go perfect, and the test's that didn't turn out well.

Now I've been told that our website www.3dtotal.com had a bit of an effect on you in the early years, and wouldn't you know it ... I am the founder of the aforementioned site! So please bear this in mind and continue to tell us a bit more about your experiences with 3DTotal!
www.3dtotal.com was the first 3D related site that I came across in the early days of my schooling at Fullsail. It quickly became my home because of the wonderfully helpful forum community. At the time I started posting, I was very new to the 3D world and quite frankly, very nervous about posting my work. I was a sensitive beginner but I was able to get the kind of feedback I needed at 3DTotal without feeling like the world was coming to an end. I find the community to be constructive, informative, and most important to me, positive. Always positive.

There's a hell of a lot of character in your characters. Where do all your ideas and inspirations come from? And why do you love creating them?
I'm the creepy guy that sits in the corner of an airport with his hood on, and stares at people as they walk by. I love people and all their

imperfections. Call me crazy, but I find the chick who works at the local supermarket, has funny looking elbows, abnormally large ears, and scratches her neck until it's nearly bleeding when she gets nervous, 1000 times more interesting and in fact more beautiful then the Paris Hilton's and Linsey Lohan's of the world. So, I suppose my ideas and inspiration come from observing people. That and the fact that my Mom dropped me a few times when I was a kid. Why do I love creating characters? I'm not really sure. Maybe I have a God complex? Of course, if I was God, everyone would look pretty damn funny.

A lot of people now have very scary images running through their heads! That would be great image for you to do - a whole supermarket scene packed full of whacky characters. Does sketching play much of a part in your work? When you're out and about, or for planning your projects?
A supermarket scene packed with wacky characters, hmm ... [grabs sketchbook].

Absolutely. Sketching is a huge part of my work flow. Both at work and on personal projects. I always feel at peace when I'm sketching.

In 2005 your work was, er ... how shall I word this? 'Average to good'? A bit harsh I know, but what I'm leading up to say is that by 2007 and 2008, your work was absolutely amazing! Can you tell us some of the secrets that lead to this massive development?
You're being too kind by saying 'average to good'. I cringe when I look at my older work. However, I keep them on my site because I'm very proud of the progress I've made in the few years I've been doing this. The bottom line is that I'm insanely passionate about 3D art. Just thinking about my passion for art makes me want to jump on a couch and shake the hell out of Oprah. Of course, 'passionate' is my romantic way of saying 'obsessed'. A normal day for me is 9-10 hours at the studio, a bowl of frosted mini wheats, a quick cuddle session with

my cat, and then 6-7 hours of working on my personal work. This can put quite a strain on my relationship with my girlfriend, but she's a sassy gal and seems to have no problems keeping my soul in check. Plus, I buy her new shoes every now and then. It's hard to sum up, but here are a few things that I found very helpful in my progression: anatomy, anatomy and anatomy. I was never particularly interested in photo real art, but I realised early on that you have to learn the rules of anatomy and proportion before you can break those rules. Read every lighting/ rendering book you can find. It's amazing what a nice lighting and rendering set up can do for an average model. Get as much feedback as possible. I find that people completely removed from the 3D world are great at picking apart my work. And of course: practice, practice, practice.

Wow! That's the most packed-with-great-tips answer I've ever read! You should get an award for that. I'm so impressed, I can't even think up another question!
Okay, your reel's downloaded! [Opens up QuickTime and prepares to feast eyes for the next three and half minutes]. Very cool indeed! It's great to see fantastic modelers with reels as well as stills galleries. Would you advise other upcoming modelers to do the same?
Thanks Tom. I really love putting reel's together. I'm not sure what it is about the process, but I really do get a kick out of it. Who knows what the best formula is, but this one has worked for me. One things for sure though. The more exposure, the better. Besides a reel and a website with stills, it helps to post your work in forums and submit to different things around the web. Such as 3DTotal.com, and 3DCreative magazine. Ok, there's a plug, can I have some money now? [Laughs].

Sure! Just let me know how much you would like and I'll pop it in the post for you. Now there's an interesting question that you've walked right into: in your life, what's the thing that you're most ashamed for spending your hard earned cash on? (Note to the readers, sorry this isn't a 3D-related question in any way, but I'm sure we want to read Eric's answer all the same!)

Trick question! I bet you thought that you were going to get me to admit that the high heel shoes I buy for my girlfriend are actually for me. And that I wear them around the house every Tuesday afternoon when she works late. And that I like to dance around the house in them, with a glass of wine in hand, while listening to Enya. I will never admit that! I did recently buy a kneeling chair to relieve some back stress. While I'm not really ashamed of the purchase, it has caused a few embarrassing moments. The first time my girlfriend walked in and saw me at my desk in my new kneeling chair, she thought I had finally snapped and was praying to my computer.

So what's on the horizon then Eric, in respect of both work and pleasure?
Since the days of being a chubby little-little
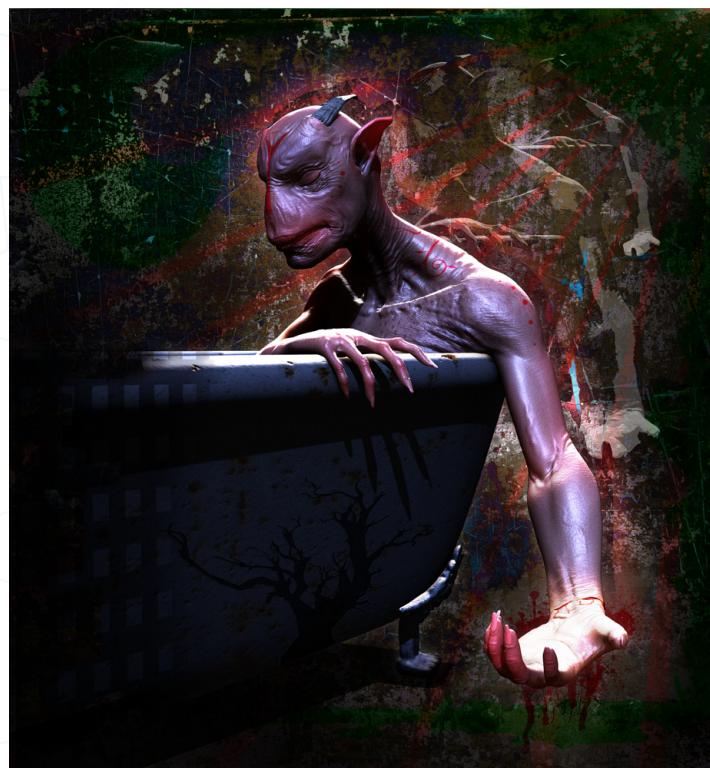
league'er, my Mom and Pop have taught me to set goals and dream big. I was insane enough to listen then, and I'm insane enough to continue setting goals and dreaming big today. I'm probably the happiest modeler you'll ever meet, but eventually I would like to have more creative control. I love writing stories, poems, and coming up with concepts. The short term goal is to find a way to do this professionally. I'm also currently working on two personal short films, and hope to have at least one of them done by the end of the year. The big dream is to have one of my ideas developed on a large scale. Whether it be TV, Film, or Print. I'm in no hurry though. Until that day comes, I'll continue creating goofy characters, writing odd

poems, and cuddling with my three-legged cat. As far as pleasure goes, I'd really like to do some more traveling. Possibly even do some work over seas. I'd also like to get my big brother back for beating me up all those years, grow a tree, maybe pop a question or two!? and learn how to juggle.

Some good plans there; can't wait to see your short films! If you ever want to come and work in the UK , then give us lots of warning so we can go and hide! Seriously, we know lots of people here if you ever needed any help but I'm sure you would get snapped up anyway. I should be in LA later in the year, running the 3DTotal.com booth at Siggraph and it would be great to meet you in person Eric! (And no, you can't have any more cash for that plug!)

The UK is high on the list of the places I'd like to visit/work. The studios over there are getting more and more work and the quality of that work is becoming more and more amazing. So, who knows? Plus, if all the chicks in the UK look like the chicks in the Monty Python films, I'll have a lot of inspiration to work from. Siggraph sounds great! I'll be looking for you. The first round is on me.
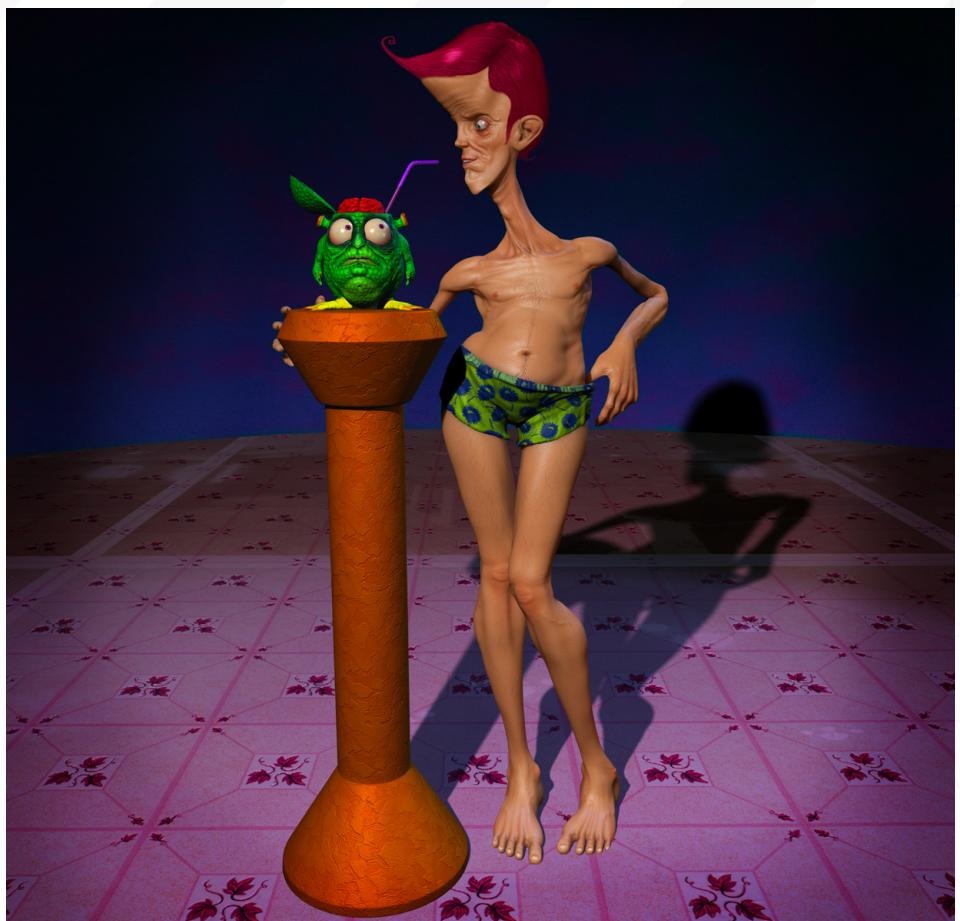
Wishing you, Holly and Keek all the best! Super thanks for your time Eric! Thanks again for this interview, Tom. You and the gang at 3DTotal have always been so kind to me and the rest of the 3D community. We appreciate all the hard work y'all do. And to those that have managed to make it this far into the interview, thanks! Feel free to contact me with any questions. The only answer I've never been able to answer in my entire life is one that my brother would constantly ask me, "Why do you keep hitting yourself, why do you keep hitting yourself?".

ERIC PROVAN

For more work by this artist please visit
http://www.ericprovan.com
Or contact them at:
eric_provan@yahoo.com
Interviewed by: Tom Greenway

"THE QUALITY OF MODELLING, MATERIALS, LIGHTING AND COMPOSITION ARE ALL EQUALLY IMPORTANT. IF ANY OF THESE IS PRODUCED WITH LESS CARE, THE FINAL IMAGE WILL BE WEAKER"

Zoltan Korcsok is a multi-talented artist who has not only worked with traditional mediums, but who has also established himself in the games industry. Working across a number of packages, he dedicates his knowledge to creating detailed character and creature designs and is currently working on nextgen games.

ZOLTAN KORCSOK

ZOLTAN KORCSOK

Can you tell us a little about yourself and how you came to be involved with 3D?

Well, first I graduated from art college, then I graduated from the Moholy-Nagy University of Art and Design as a Designer in Visual Communication Arts.

Besides the 'conventional' types of applied graphics (e.g. illustration, typography) I do other kinds of art, like etching and oil painting.

I got involved in 3D in the nineties when I started to work in the games industry. Since then I've worked for many games developers as a concept artist, 3d graphic artist or mattepainter.
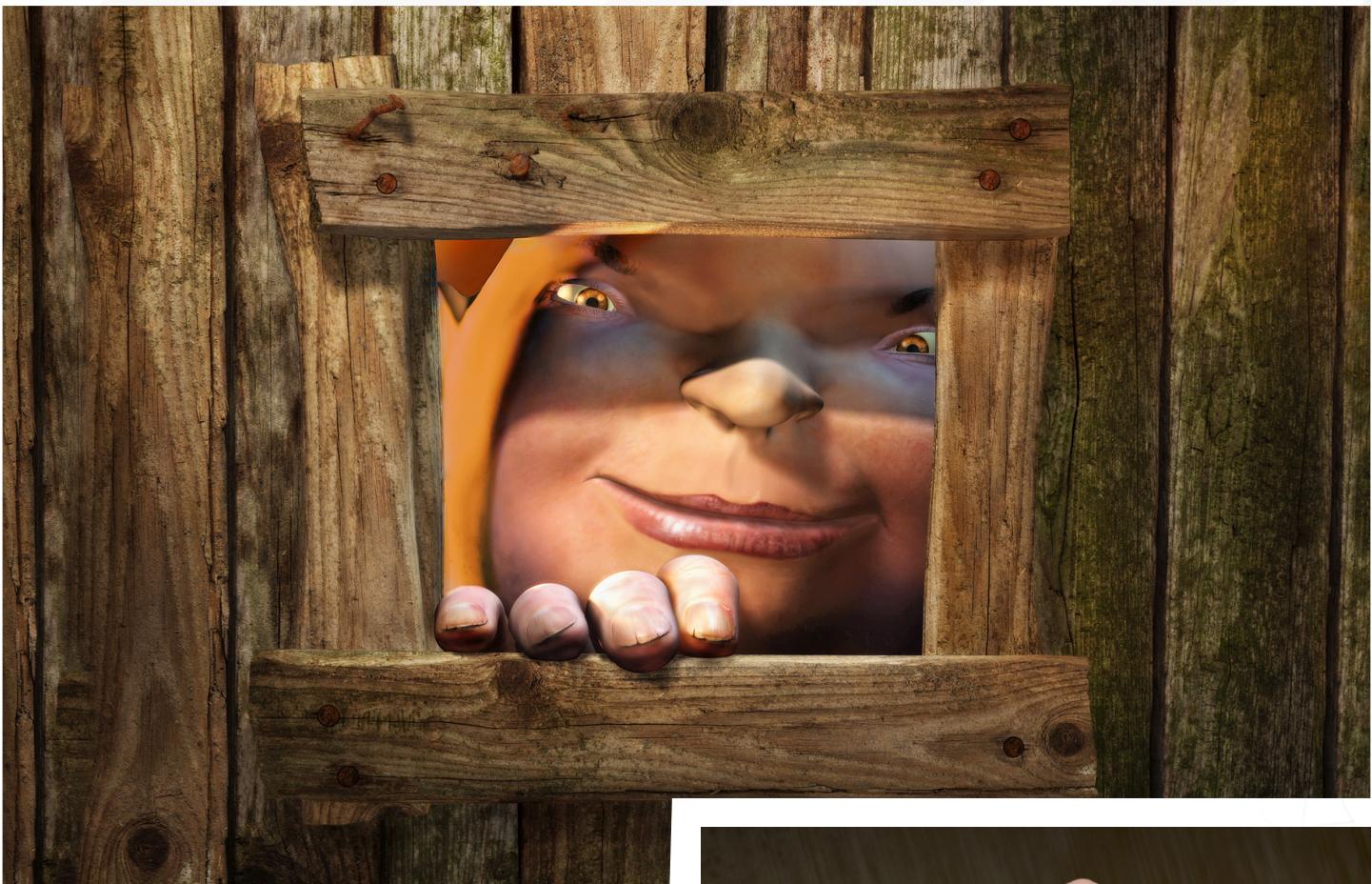
Can you tell us about the games you have worked on, and in what capacity, and the nature of your mattepainting?

The first game I worked on was an FPS, titled 'Seed', for which I created level textures. I drew characters and backgrounds for online games with marketing purposes, for Jack Daniel's or Tchibo.

As a freelancer I did mattepaintings for cut-scenes, e.g. for 'Armies of Exigo', for which I painted realistic landscapes fitting the levels, but I also drew backgrounds for the Mr Bean cartoon. Recently I worked on 'Warhammer: Mark of Chaos' as a 3D artist. Currently I'm creating content for nextgen games.

I can see from your gallery of images that you are a keen user of Modo as well as ZBrush. As someone who uses both, how do you think the two compare?

Around 2000 I got a trial version of ZBrush from a demo CD and I found it an efficient tool for creating illustrations. I bought it and my wife and I (who is also a designer) have been using it ever since. I first found out about Modo in 2005, and found it to be a very good tool for subdivision modelling.

ZBrush is a 2.5D software package, but it's not only usable in a workflow with other software, it can be used to create 3D stills or paintings with 3D

elements. Despite the vast amount of polygons it can handle, it runs quite well on a machine with a weaker VGA.

Modo is a complex 3D program that only lacks several additional animation tools. From modelling / sculpting through texture painting to rendering; everything can be done in Modo, and only post processing might require you to use other software (I used it in game development for creating models and textures).

But to be able to use it's capabilities of Advanced OpenGL display (needed for sculpting), a better OpenGL VGA is needed. From the aspect of sculpting, in ZBrush you can sculpt a high res model, then generate a Displacement Map for the low res model. In Modo, however, you can paint the Displacement map itself onto the model, and use a Vector Displacement Map, which has the great advantage over Displacement Maps in that you are able to create geometry overlapping itself.

Both have been championed by numerous artists and seem to have set a precedent in terms of what can now be achieved within the realm of organic modelling. Where do you see the further development within the software? I think software will become even more complex,

because the increasing performance of newer hardware makes it possible for them to have every solution needed for a given task. The tools of Modo and ZBrush are also made more useable by the special plug-ins and scripts that have been created by the community.

Your portfolio shows a distinct leaning towards organic modelling and, in particular, characters. What attracts you to this genre more than any other? I like to model living things and characters more. In the case of a character, you have to form a

personality, not just shapes and textures. This makes it interesting for me.

Your Hellfire Widow seems to be one of your most complete pieces to date. What proved to be the most challenging aspect in creating the image? The Hellfire Widow was made for a contest organised by Luxology and Subdivisionmodeling.com. I looked up lots of different descriptions so that I was able to model the spider in an anatomically accurate way. The real challenge for me was to set up the camera

and the render settings. It took quite a lot of time, since I wanted to create a photographic-like composition.

Although every aspect is crucial, do you think render settings and lighting has a bigger impact on realism than, say, the model and textures? And where do you think most images are let-down when trying to achieve this goal?

The quality of modelling, materials, lighting and composition are all equally important. If any of these is produced with less care, the final image will be weaker. It's interesting, that usually the most simple and well-thought-out solutions give the best result.

Another of your fully textured pieces are the sardines in a tin. Tell us a bit about the idea behind this rather amusing image?

My wife and I send self-designed holiday cards to our families and business contacts every year. This image was made for a holiday card like this. The idea was to make a reference to the Christmas holidays in an unexpected situation.

There are more and more people now getting into the realms of 3D and Zbrush. What advice would you give to beginners wishing to become successful modellers?

The software is only a tool. Other knowledge and talent is also needed for one to be a good modeller. I'd recommend to beginners to learn to draw along with learning to use software. Or if they have the opportunity, attending a design school might prove quite helpful to them.

Many artists seem to emphasize the importance of drawing but some modellers do very little and still manage to produce good work. So why do you advocate drawing as a useful practice in answer to some of those artists who may have a different opinion?

Drawing from reality helps in the development of sense of proportion and space, and it makes you more open for seeing hidden connections. Experience gained by drawing studies can be quite useful when planning a given work.

ZOLTAN KORCSOK

For more work by this artist please visit:

http://trurl.cgsociety.org/

Or contact them at:

bea.zoli@t-online.hu

Interviewed by: Richard Tilbury

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"Show only your best work ! I would rather show three pieces of great work that make a really short showreel, than ten pieces of mediocre work that make a two-minute long one!"

What is an important
factor when compiling a portfolio?

This month, we have asked 3D artists from a variety of backgrounds and locations around the world:

What is an important factor when compiling a portfolio?

Here's what they said...

WHAT IS AN IMPORTANT FACTOR WHEN COMPILING A PORTFOLIO?

ADRIAN TIBA

System Engineer, SC Infologic

Oradea, Romania

Variety and quality of works.

ALI ISMAIL

Digital Artist, Lucasfilm Animation, Singapore

Leaving out anything which isn't up to standard.

ANDERS LEJCZAK

Project Manager, Framfab, Malmoe, Sweden

I wish I knew how to answer these things better, but I guess showing that you are technically skilled and at the same time have a creative height.

ANDRÉ HOLZMEISTER

Always select only the best of the best.

ANDRE KUTSCHERAUER

3D Designer, Studio Messslinger Gmbh

Munich, Germany

Less is more. Show only your best. Short as possible but very high quality.

ANNA CELAREK

Student, Vienna

It shouldn't be boring, the percentage of cars should be low, and there should be some interesting pictures in it, something that you don't see every day. Because many portfolios go like this: car, naked chick, a kitchen, and some monster. I think that you should try to bring new ideas in.

BOGDAN

You have to pay attention to many aspects when you're compiling a portfolio. You have only one chance to make your first impression. Usually this first impression makes the difference on the preliminary selection. After this "prima facie case" you'll have the chance to

Image by : Andre Kutscherauer

Image by : Peter Sanitra

prove your skills. So for this your résumé must be very clear and easy to be read. The portfolio must have only your best work and no WIP. Another important factor is image description: for example, you must be clear if the work was made by a team

CESAR ALEJANDRO MONTERO OROZCO

CG Artist & Freelancer, Digi-Guys

London (UK) and Mexico

It's important to have a goal in mind. You should know to whom you want to send it, and for what position. Don't be afraid of asking professionals

for advice both before and after you do it. Some will be jealous of your work, some others will encourage you. You will learn a lot from asking.

DANA DORIAN

Director, Axis Animation

Glasgow, Scotland, UK

Only show your best work, and keep it short. If someone wants to see more they will ask.

DANIEL VIJOI

Having lots of artwork to show (not only two or three projects or so), making sure it's well presented and covers different areas of interest.

When I look at a portfolio, I look first at what kind of an education the artist has had, second at his experience and finally at his art.

David Revoy

Compact portfolios, direct to the goal, are definitely more successful.

Eric Provan

3D Modeller, Sony Pictures Imageworks
LA, USA

Have anyone and everyone critique your portfolio. I find that I get my some of the best ideas from people that know nothing about CG.

Eugenio Garcia

3D Illustrator & Animator, GrupoW
Saltillo, México

Show only the jobs that you enjoyed doing.

Gustavo Groppo

General 3D Artist, Mamute Mídia
São Paulo, Brazil

The compilation of work has to be something that shows what an artist is and where his talents lie. Personally I don´t like portfolios that are based on quantities of work; you might only be able to find one great work amongst hundreds of others. A good compilation is a selection of the best of what an artist can do - so be the best every time.

Hasraf Dulull

Visual Effects Artist, The Moving Picture Company, London, Soho

Show only your best work! I would rather show three pieces of great work that make a really short showreel, than ten pieces of mediocre work that make a two-minute long one!

Jure Zagoricnik

Web Developer & 3D Freelancer, Hal Interactive & 3D Grafika, Kamnik, Slovenia

Quality not quantity.

Liam Kemp

I'm not the best person to answer that, as

Image by : Hasraf Dulull

I've never really put together a 'proper' one (I just sent off my animated short on a CD and fortunately that was good enough for them!)

Matt Westrup

Put only the best pieces in and put them at the front of the portfolio. Don't put pieces in that you are not very proud of - they will make the good pieces have less impact.

Michael Seidl

3D Artist, Modelling & Rendering, www.michaelseidl.com, Vienna, Austria

I think that it is very important to focus on your strengths, and not to try to cover a wide range of skills that you might not have.

Neil Maccormack

Freelance 3D Artist, Bearfootfilms
Geneva, Switzerland

Only show your best work.

Nicolas Collings

If you want to be a character modeller then I suggest you demonstrate your anatomy, your polymodeling (edgeflow, animateable mesh) and your texturing abilities. You can make a human model, a beast and a robot for instance.

Pedro Mendez

Personal identity.

Pete Sussi

Cut out the garbage. I like to start with what I think is good, then cut that down by 1/3. It

Image by : Matt Westrup

helps to find the "sweet spot". Also, show what has been done well, not always what looks interesting. An exploding spaceship is an exciting thing, but if it's not well done it could end up hurting you.

Peter Sanitra

3D Artist, ImagesFX, Prague, Czech Republic
Always think more than one step ahead.

Petra Stefankova

Focus on your best pieces and professional, great-looking presentation. Right now many companies are looking for top of the class specialists, but some flexibility and an open-minded approach is always good. Most importantly: try to be different. I don't mean you have to act like someone else; just be yourself and if something feels right (even if it sounds crazy) then go for it.

Rich Diamant

Know your target company. I can't tell you how many times I've gotten portfolios that are full of low polygon work when we are looking for a high res artist. Or a reel full of creatures when we are looking for someone to make realistic humans. If you really want a job at a certain studio, tailor your reel for them. Chances are you won't even be considered if you don't have work in the style of genre that they are looking for.

Sean Dunderdale

Be harsh on yourself and as self-critical as you can manage. Remember, a potential employer will view your work with a very critical eye.

Sorin Radu

Quality of the works that are put in the portfolio.

Stepan (O)ne Grakov

To be yourself. To show the works that represent your view of the world.

Sven Rabe

Keep it nice and short. Less is more!

Image by : Pete Sussi

Tiziano Fioriti

Freelance 3D Artist & Digital Matte Painter
Italy

We have to show our strong points and our creativity. In this field, it's not always perfectly-instructed people that are required; on the contrary, a great deal of versatility is necessary. You need people who can learn the ropes quickly and put their creativity to good use. It is really very important that each of us doesn't forget our main goal: attaining excellence.

Tycane

3D Developer & Designer, NDG, Amsterdam
Less is more. Show the best of what you have. Also check where you are intending to send your portfolio and find out what it is that they would like to see.

Vojislav Milanovic

Honesty! I really mean it. Be honest and people will recognise it.

Zdenek Urbánek

Student, Liberec City, Czech Republic
While I don't have my own portfolio so far, for me the most important factor is originality.

In next month's issue, find out what a group of artists said when we asked them:

"Jack of all trades or master of one?"

maya brings animals to life for **Fido**

Stockholm-based Fido Film is a visual effects and 3D animation specialist that provides special effects, CGI and other related services to film and commercials clients from around the world. The company was approached by production company Tangerina Azul, which had won the contract to create a series of commercials for mineral water brand 'Pedras Salgadas' for Publicis in Lisbon.

Fido

maya brings animals to life for

The idea for the commercials was based on a similar concept to the Dairy Crest advert, which features CG animals cleaning and tidying up a kitchen (visual effects by Framestore-CFC). Publicis wanted to show a variety of animals working away in the Perdas 'factory'. Fido had just ten weeks to create four commercials, so the team worked closely with the director and producer at Tangerina to plan each shot.

"It was immediately clear to us that the available time and budget for Perdas wouldn't allow for all the animals to be created in CG," explains Fido Film partner/producer, Thomas Deutschmann. "The brief also had most of the animals doing extraordinary things, but we were able to convince the director that the commercial would work well with just a few of the animals doing this. Overall the campaign was supposed to be realistic as far as the animals were concerned, but there was room for a dreamlike quality - especially in 'Factory'."

After discussions with Tangerina Azul and Publicis, it was decided that a mix of in-camera
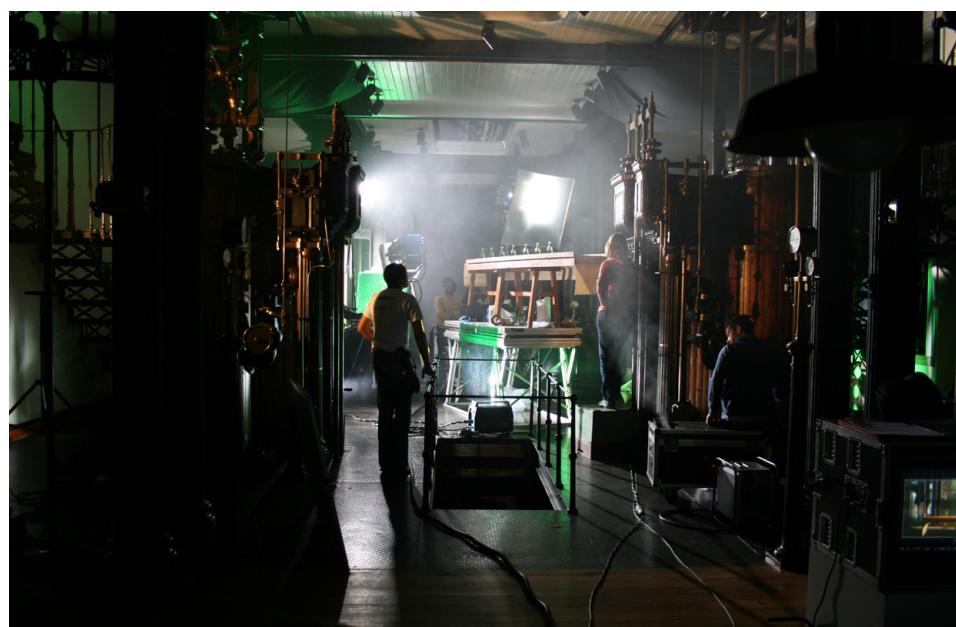
vfx coordinator Daniel Norlund and a Siberian Bear

effects, live animals and CG would be used to create the final look. The shoot took place in March 2007, using live animals from Madrid-based Zooko Produciones in a former water works in Lisbon (now a museum). The location is described by Deutschmann as similar to being in a Jules Verne film.

Meanwhile, back at Fido, the team was busy creating 3D squirrels, racoons, birds and butterflies. "Realistic animals integrated with live material – you don't need much more of a challenge than that!" says Deutschmann. "However, in close co-operation with the animal trainers from Zooko, we made a plan - as far as can be done when working with live animals. On the set we managed to get most of what we needed, and we felt that the rest could be achieved in CG."

Mixing live action and 3D animals allowed the team to keep all their options open, while making the best use of the budget and the very tight time schedule. But the animals – both live and CG – proved to be the major challenge of the project. As Deutschmann explains, "Usually you only allow the client to choose two out of the three - good, cheap and fast. So being able to put our top crew on the job was essential."

Fido had developed realistic CG wolves for a Norwegian feature film so they already had a fur-pipe in place. The squirrel and racoon were developed over a couple of weeks. Autodesk Maya 3D modelling and animation software was used extensively on the job alongside Renderman, cMuscle, Match Mover and Shake. According to senior animator Staffan Linder, the geometry cache feature within Maya proved absolutely essential to the project, allowing the Fido team to separate animation rigs and geometry when rendering the fur.

vfx coordinator Daniel Norlund and a Siberian Bear

The timescale proved to be a major factor on the project. Following the shoot, the team had just two weeks to deliver the first two films of the campaign, three weeks to deliver 'Factory' and a further three weeks for 'Distribution'.

"The challenge of time was overcome by hard work and clever planning. I don't think we did a single motion or render that wasn't necessary for the end result," he says. "In one shot in 'Factory' we have a live racoon in the foreground and two CG racoons working in the background. Mixing live

and CG of the same furry animal in the same shot was a first for us." 'Factory' features the factory where the Pedras Salgadas mineral water is produced, while the distribution of the mineral water to a small shop is featured in 'Distribution'.

Talking about the elements of the jobs the team is most proud of, Deutschmann adds: "The animation looks great and the 3D rendering worked nicely after some tweaking. Butterflies

are not that hard to animate, but I'm personally very happy with the pack shot for 'Factory'. I just think it looks beautiful. The shot where all the animals enter the store in 'Distribution' features 14 digital creatures – that's also a shot we're very happy with."

Maya Brings Animals To Life For Fido

For more information please visit:

http://www.fido.se

Or contact:

thomas@fido.se

Article Courtesy: Thomas Deutschmann

Image : chen qingfeng

GALLERIES

This month we feature:

Arturo Garcia

Stefan Biermann

Simon Reeves

Volkan Kacar

Patrick Beaulieu

Teh Gene Erh

Jordan Walker

Matthew Clark

Mashru Mishu

Matt Roussel

send us your images! : gallery@zoopublishing.com

3dcreative

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GRUMMAN F-14 TOMCAT

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BAD MOOD

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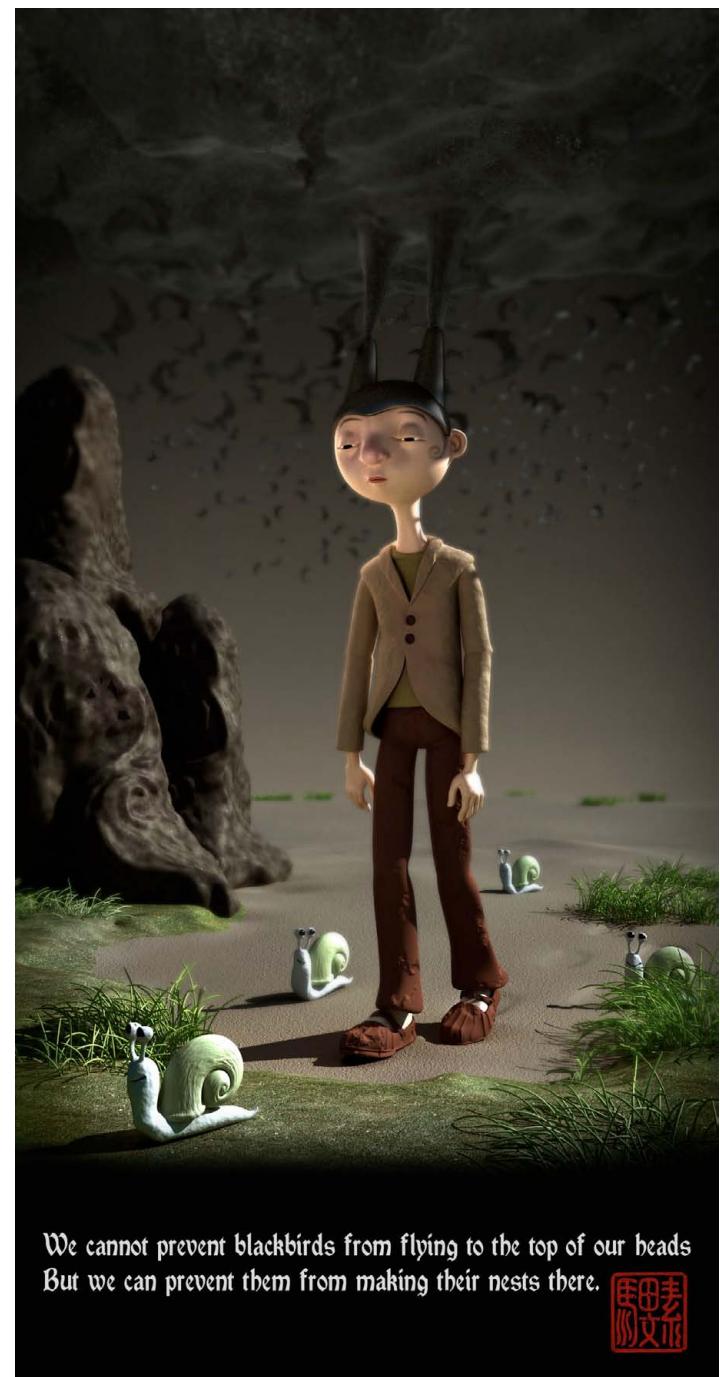
We cannot prevent blackbirds from flying to the top of our heads
But we can prevent them from making their nests there.

3DCreative Magazine introduces the 'Challenge' section of the mag. Every month we will run these challenges, available for anyone to enter for prizes and goodies from the www.3dtotal.com shop, and also for the chance to be featured in this very magazine! The 2D challenge runs in the ConceptArt.org forums, and the 3D challenge runs in the Threedy.com forums. Here we will display the winners from the previous month's challenge, and the Making Ofs from the month before that...

Bull
in a china shop
Stylised Animal Challenge
with a twist

Stylised Animal Challenge

Bull in a China Shop

THE CHALLENGE

Welcome to the Stylised Monthly Animal Challenge with a twist. Each month we will select an animal and a scene and post some images for you to use as reference in the forum thread. The animal and the scene is there to be interpreted as and how you wish; in fact, for example, if we say "fish out of water", then there doesn't actually need to be a fish at all – it can just be used as a metaphor. Get it? All you have to do then is to think up your concept, model it and create a final 3D image of this in your own way! This regular monthly challenge is designed to bring in some great content for 3DCreative Magazine – in the form of final images from the top ten and Making Ofs from the top 3 winners – as well as some great prizes and exposure just for you! This month's animal and scene was the Bull in a China Shop ; here you can see the top 7 entries, as voted for by the public.

WHAT ARE WE LOOKING FOR?

Funny and humorous entries which interpret the 'animal and scene' brief however you see fit. As I said, you can use the 'animal and scene' briefs as metaphors if you wish, meaning they don't actually have to feature the animal that the brief discusses. We're pretty much leaving everything open for your interpretation! All we ask is that the 'animal and scene' brief is instantly recognisable in your final image, whether literally or metaphorically! All you have to do then is to render your stylised/abstract/cartoon masterpiece and you're away. The rules are pretty laid back: please submit 1 x 3D render (minor post work is okay). It's up to you if you want to have a background or if you want include some graphical elements or text on your image. Renders of the 800 pixel dimension sound about right, but the winners will be featured in 3DCreative Magazine, so if you can create some higher resolution images too, all the better!

7TH Adroit.jrk   jamshaid.jrk@gmail.com

6TH DaveO   dave@daveoport.com

6TH Marzip

5TH Siege

There will be one competition per month, with the deadline being the end of the month (GMT). For a valid entry, just make sure your final image is posted in the main competition thread before the deadline. We require the top three winners to submit 'Making Of' overview articles that will be shown on either 3DTotal.com or in

4TH SILVATICUS

3RD PANTS

http://bostontea.deviantart.com/
swedish_roll@yahoo.com

3DCreative Magazine. These need to show the stages of your creation, different elements, and some brief explanation text of why, and how, you did what you did. We will format this into some nice-looking pages to give you some great exposure, and us some quality content.

Each competition will have one main thread, which starts with the brief at the top. All entrants should post all WIPs, give feedback, and generally laugh at the crazy ideas that are emerging each month!

CHALLENGE THREAD
The entire 'BULL IN A CHINA SHOP' competition can be viewed here.

2ND DADDYDOOM

pedroldaniel@netcabo.pt

The current challenge at the voting stage is:
'THE EXECUTIONER!'.

The current challenge taking place is:
'CAVEMAN'

To join the next challenge, or to view previous and/or current entries, please visit:
www.threedy.com

Or, for the 2D challenge, please visit:
www.conceptart.org
Or contact: lynette@zoopublishing.com

1ST MR POPPIN FRESH

http://jttruong85.blogspot.com
jttruong85@yahoo.com

2D CHALLENGE

Here are last months top entries from the 2D Competition:

2ND 28THWING

3RD FREAKDESIGN

1ST DAVENEALE

http://www.daveneale.co.uk
davejneale@hotmail.com

Making Of's

Here are the 'Making Of's from last month's top winning entries...

3rd: Siege

Concept

Dude, I get to make a dragon – sweet! I started off by perusing my children's books (cough, cough). Actually, I buy books for my kids that come in handy for me, too. Anything that catches my eye as a reference I tend to pick up. I saw some things I liked – a little influence here and some from there.

Modelling

The programs I used for the creation of the dragon were ZBrush, 3ds Max and Photoshop. I jumped right into ZBrush, using the amazing powers of ZSpheres. ZSpheres are an incredibly quick way to rough out a mesh, and

Fig01

Fig02

Fig04

Fig03

Fig05

I was soon able to get a form that was going in the right direction (**Fig01** and **Fig02**).

I converted the ZSpheres into a Polymesh and then started pushing and pulling the mesh to further refine the form (**Fig03 and Fig04**). Then I finalised the dragon's head and inserted a sphere for the eyes (**Fig05**).

I decided to do the head and body mesh separately. So, after finishing the head, I moved onto the body using the same workflow. Once I got the Zspheres converted to a Polymesh, and the form about what I wanted, I exported the model as an OBJ file into 3ds Max. I cleaned up the mesh, rebuilding some areas and cutting and pasting other areas. The main areas that needed the most fixing were the wings, arms

Fig06

Fig07

Fig08

Fig09

and feet. For the wings I duplicated the outer part three times to create the form of the wings. Combining these into a complete wing proved difficult for me and was hit and miss for a while, but I eventually got something that worked. For the membrane of the wings I deleted a section on either side of the bones and did a simple bridge to connect it. I deleted half of the model and mirrored to create a new finished mesh (**Fig06**, **Fig07, Fig08, Fig09, Fig10, Fig11** and **Fig12**).

I imported the saved mesh back into ZBrush to begin some alpha texturing. Nothing special
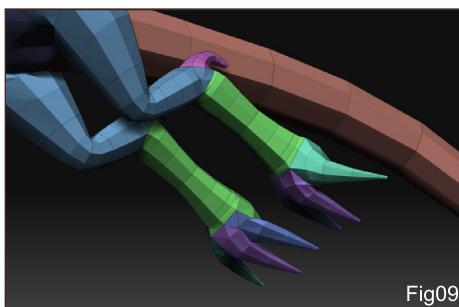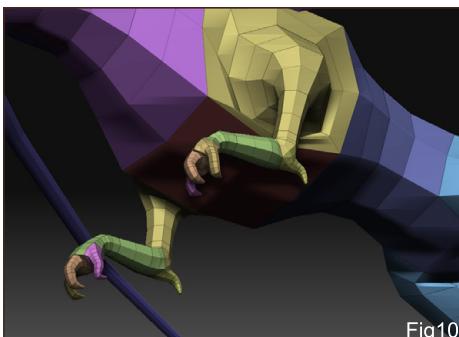
Fig10
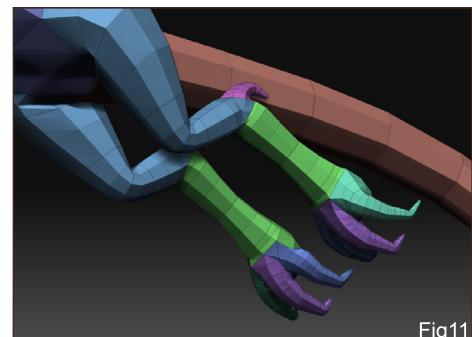
Fig11
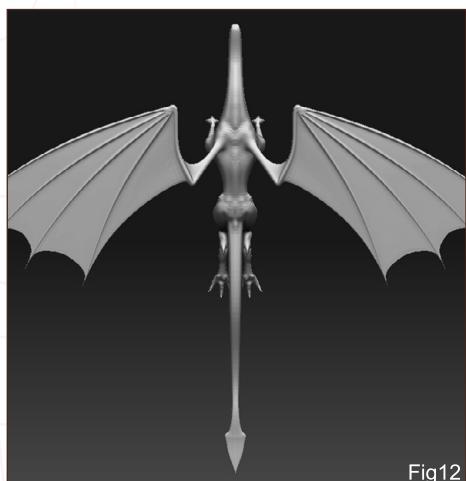
Fig12
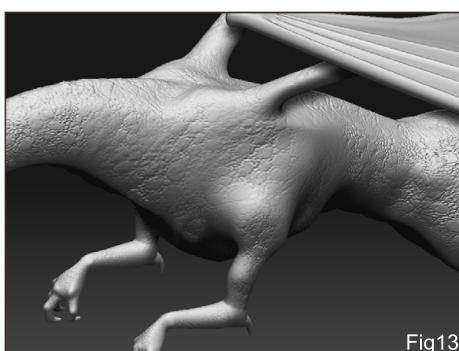
Fig13

Fig14

Fig15

here; I just picked a few that seemed to work. Knowing that the detail wasn't especially important, I just threw some on until I felt it had enough. Then I moved onto the head, using the same techniques (**Fig13, Fig14, Fig15** and **Fig16**).

With the head and body finished enough to move on to the next stage, I used ZBrush's transpose tool to force the mesh into a more dynamic pose. Transpose is great for one-shot images – I can forgo rigging the mesh and just dive right into posing! (**Fig17, Fig18** and **Fig19**).

I combined the posed body mesh with the head, and then rotated the model until I got an angle that I liked. (**Fig20** and **Fig21**)

Fig16

Fig17

Fig18

Fig19
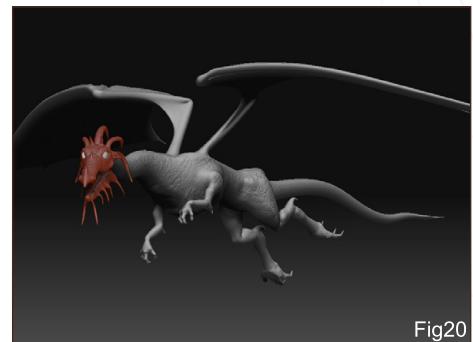
Fig20

Rendering

I tried using poly painting to texture the dragon but quickly abandoned this method because time was running out. I resorted to my quick method of doing textures. This process is done by selecting different default and found materials and exporting a render as a PSD file. I can then drag these individual MAT renders into separate layers in Photoshop. For the dragon I went way overboard and just used four renders in the end. Using quick masks I was able to quickly paint different areas into the final image.

Apply a blue gradient and you have instant sky. Beautiful, right? Nope! So let's put in an image of dark clouds. I manipulated this until it was dark and looked foreboding. With the cloud image, I duplicated it and dropped it both under the dragon layer and above it. With the cloud layer that sat above the dragon layer, I dropped the transparency way down to visually merge the dragon into the clouds. You can easily use Photoshop to bypass all the flaws left by not doing correct renders from the 3D program.
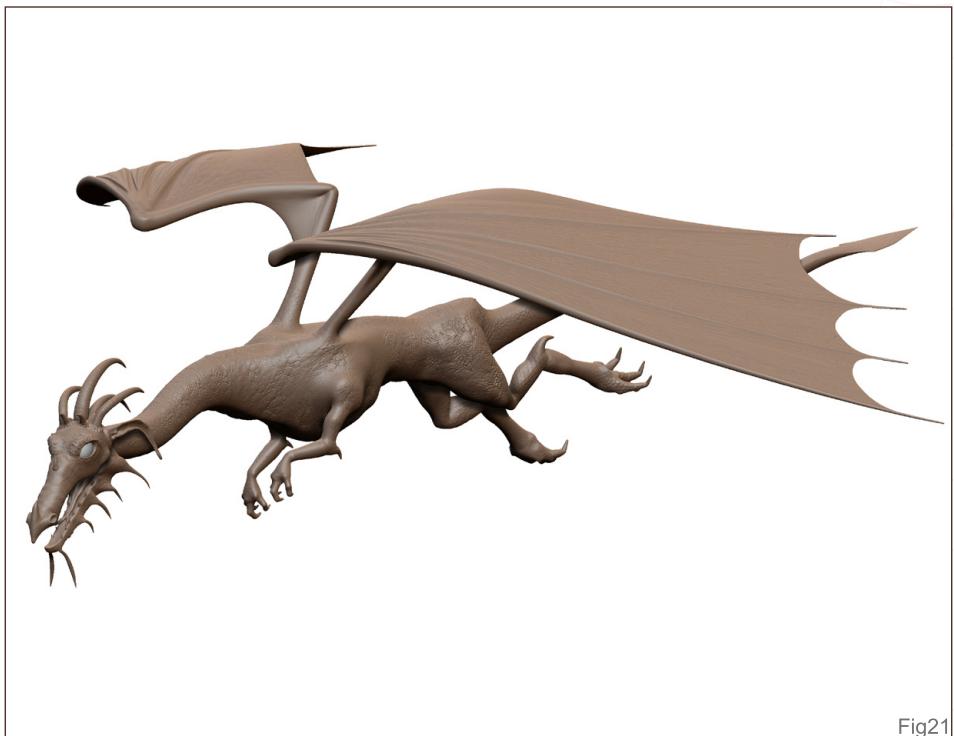
Fig21
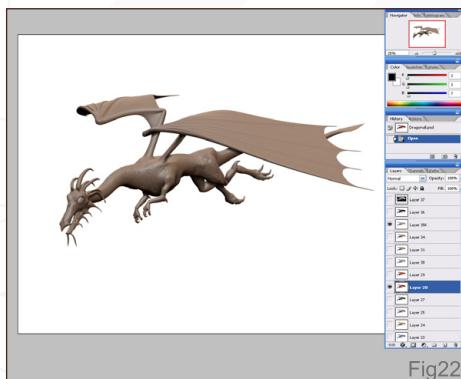
Fig22

Fig23

Fig24

So my workflow is as follows: build a model in ZBrush; forget the texture part and just render out different MATs; combine those MATs in Photoshop and fake a textured model; then paint in the details, which in this case was highlights in the eyes and saliva on the tongue; go over and clean up the render flaws with the Smudge tool, and, if needed, add highlights and shadows. I enjoy this process and it saves quite a bit of time without the need to make UV maps, painting textures and figuring out the Lighting aspects. I can quickly do a one-shot image or concept shot, and if needed I can go back to the model and do it correctly, re-topologising, UV-mapping, texturing and then rigging the model. But for these quick contests I rarely have more than a few days of free time to finish, so these quick cheats are like gold (**Fig22, Fig23, Fig24, Fig25** and **Fig26**).

CHRIS LUBITZ

For more work by this artist please visit:

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Or contact them at:

mailforsiege@yahoo.com

Fig25

Stylized Animal Challenge - DRAGON

Siege 08

1ST: SILVATICUS

STEP 1- THE IDEA

I started with a different idea, but changed my mind after reading the rules more carefully and decided to produce a funny-looking toy dragon instead. I wanted everything about it to be fun, so I didn't do much planning, I approached the modelling in a different way that I would usually and I ended up with a crazy-looking model. I used Zbrush 2 and 3.1 for almost everything, with a minor touchup in Photoshop (to sharpen).
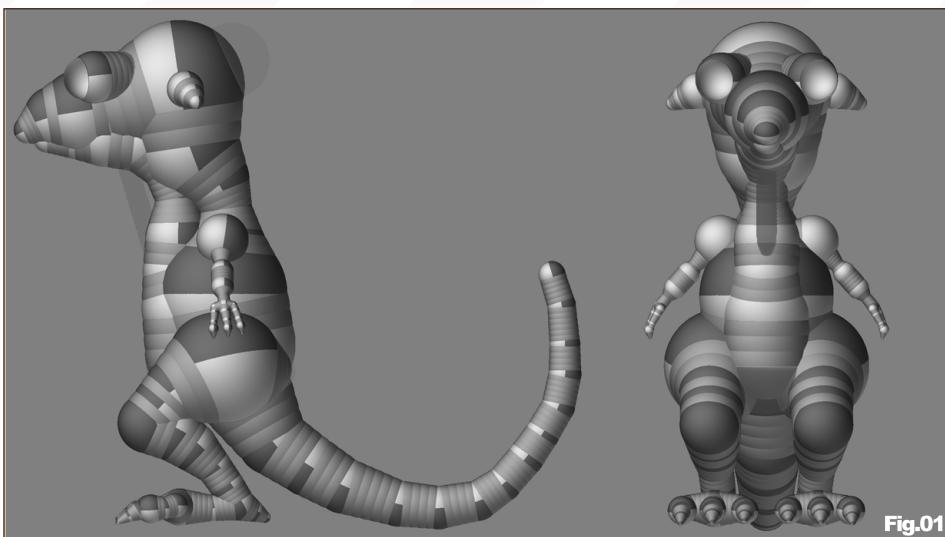
STEP 2- BIRTH

This little fellow was born of Zspheres (**Fig01**). Usually I try to make my models out of one consistent piece of polys, but this time it was composed of several pieces, using attractor spheres (**Fig02**). At a later stage in the workflow I separated the mesh into subtools anyway. Now I tried to have the parts sorted out at an early stage and polygroups are a very good way to do that (**Fig03**). These steps were done in Zbrush 2; for Zspheres, low poly tweaking and grouping I like it more than Z3.
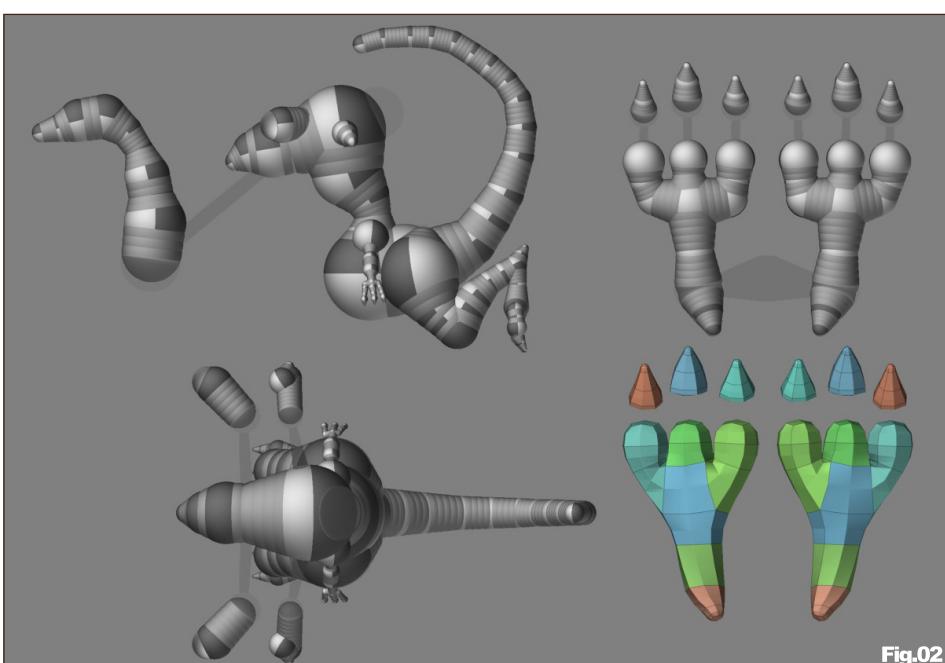
STEP 3- SCULPTING

Time to load the dragon into Zbrush 3.1. At this stage I subdivided the mesh once or twice then start sculpting with the clay brush to shape out the basic forms. I used the standard brush

Fig.01

Fig.02

Fig.03

with the lazy mouse to make the big wrinkles and then smoothed. This process continued as I went through the subdivision levels and sculpted smaller details until the mesh consisted of around 500 000 polys and the shape looked right (**Fig04**).

STEP 4- QUICK PAINT

Before splitting the mesh into subtools, I did a quick polypaint on it (nothing fancy), which basically filled the various parts with colour by hiding the polygroups and only leaving one at a time visible. I also added a little variation with the standard brush, freehand and colour spray strokes (**Fig05**).

STEP 5- SUB TOOLS AND MORE SCULPTING

To add more details and to ease my poor PC`s work as I divided the mesh further, I used sub tools. Since I had the model grouped in the first stage it was simple to obtain the subtools; all I had to do was push one button (Menu: Tool/ Subtool/GrpSplit) and I had them all placed nicely. Before making the subtools I subdivided a couple of times, then I hid parts of the mesh until only what was going to become a subtool remained on the screen, and finally I checked the polycount. This way I previewed how many polys each subtool would have and if it didn`t look okay I was able to make some changes.

Fig.04

Fig.05

Fig.06

In this case, although they were separate initially, the the toes and the feet became one subtool. The reason for this is that I didn`t want the subtools getting too polygon-heavy (which would slow my computer) nor too polygon-light (polypainting will look washed out). Each subtool should have around one million polys (**Fig06** and **Fig07**).

With the subtools in place I was able to subdivide enough to get the fine details. I used the standard brush with alpha 39 and lazy mouse to make wrinkles, then I gave them some weight with the clay or the standard brush with a bigger size and low Z intensity.

The next step was finishing the polypaint by giving more variation to the colours and painting parts like lips, eyes, spots on the skin. Standard brush again, lazy mouse and low RGB intensity, repeating the strokes if necessary.

STEP 6- THE SCENE, THE WINGS AND EXTRA STUFF

For the final scene I decided to add the mushrooms (something to make the dragon crazy), the log, the grass and a pedestal for the dragon.

Everything is made of polyspheres shaped and sculpted, except the grass which is made of Zpheres (**Fig08**).

For the wings I went through the same steps as with the dragon: Zspheres and adaptive skin in Zbrush2, modeling and paint in Z3. They weren`t added as a subtool but as a separate mesh in the final scene. Same for the eyes which are polyspheres painted with radial symmetry on. For the ground and background I used two planes filled with blue color and arranged them in the scene with perspective on.

STEP 7- RENDER

The boring part for me. I hate to wait for the renders to complete so I try to figure out light setups that don`t take that much time. The
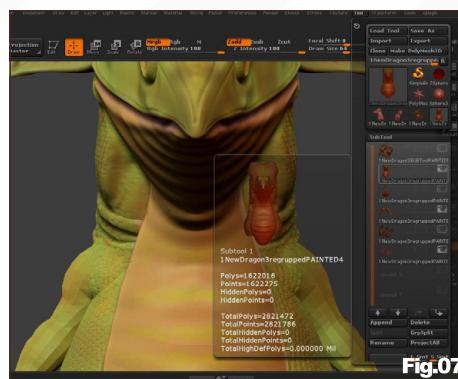
Fig.07

Fig.08

Fig09a

Fig09b

settings used here are shown in **Fig09a** and **Fig09b** . During the process of creating the dragon I did several test renders, especially to check the way the materials would look. The results depended a lot on the light and material settings and fortunately there are a few generous fellows at ZbrushCentral who constantly "donate" materials. I used one of them (posted by Atwooki) and then adapted it so that it worked properly in my image.

The Zbrush render took around 15 minutes and after I'd made some minor adjustments, the image was ready (**Fig10**).

I hope this short making of will be useful for some of the readers. For questions, comments or anything else, feel free to contact me at: rsalbatecu@yahoo.com

SILVATICUS

For more work by this artist please ontact them at deathcultlodge@yahoo.com

Fig10

Bugatti Veyron
car modelling series

Over the course of the next seven months we shall be running an in depth tutorial on how to go about creating the amazing Bugatti Veyron. The series will cover an in depth and comprehensive guide to modelling the car from start to finish and will focus on the key techniques and stages invloved in building the chassis as well as details such as the windows, lights, vents, petrol caps and engine parts etc. We will then move on to creating the wheels including tyres and hubcaps before going on to building and incorporating an interior, namely the dashboard and seating. The series will proceed with a section on creating and applying materials for the numerous parts of the car such as the paintwork, chrome, rubber and glass before concluding with a tutorial devoted to setting the scene for a finished render. This final part will cover the importance of a good lighting rig and light parameters, as well as the importance of a camera and the integral part that the rendering settings play in showcasing the model for a portfolio.

This Month :
Part 4 - Wheels, Tyres & Rims

✿ 3d02.COM
The Finest 3d Model Store

3d02.com. Commonly known as a high quality 3d model store, one of the premier stores of digital assets offering ready to use CG 3d models, and an open platform allowing artists to publish and sell their 3d models online
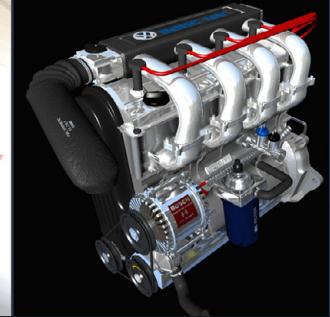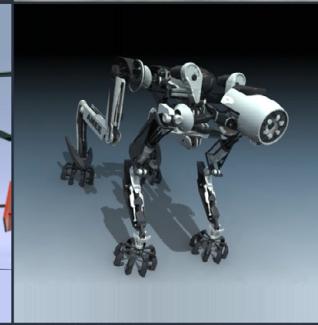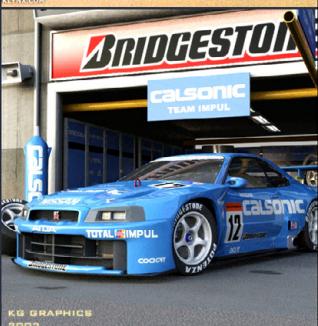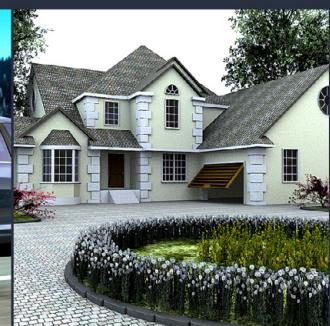
low poly game character

Downloadable Tutorial EBook

Introduction:

The original character of the Swordmaster was created by Seong-wha Jeong and we had 3DTotal's in-house 3d artist Richard Tilbury, re-create the character in 3dsmax as well as create the textures in Photoshop, in our new precise, step-by-step tutorial for highly polished, low polygon game character with detailed texturing for real-time rendering. We have also converted the tutorials into Cinema 4D, Maya, Lightwave and Softimage platforms. Even if you are not a user of one of them, the principles should be easily followed in nearly all other 3D applications.

The Swordmaster tutorials is spread over 8 Chapters which outline, in detail, the process for creating the Swordmaster below are the details.

Complete Character Creation By
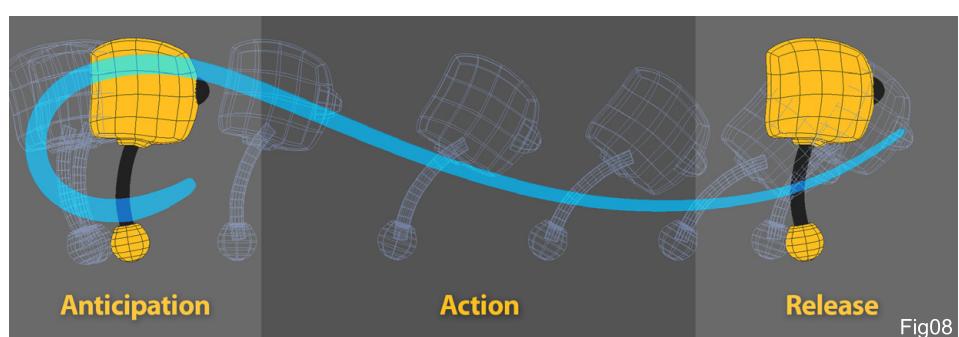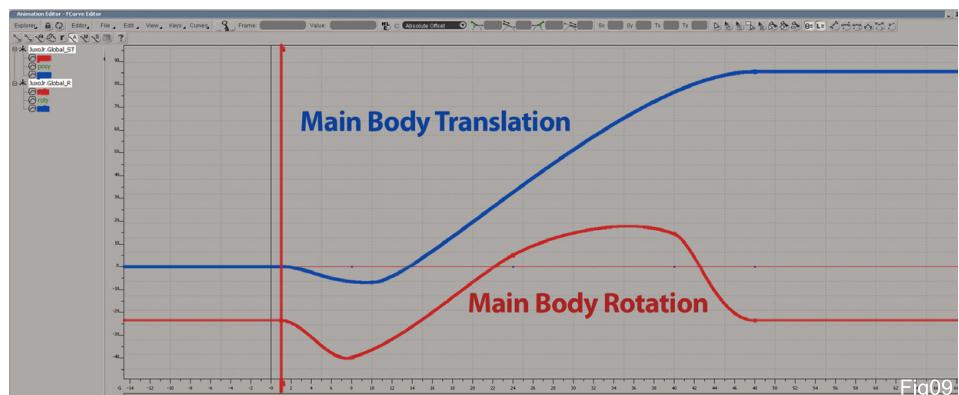RICHARD TILBURY from an original
character by SEONG-WHA JEONG

3dtotal.com

"STARTING WITH A BROAD MOVEMENT, AND THEN ADDING SMALLER AND MORE SPECIFIC DETAILS IN STAGES, WE ARE ABLE TO BUILD VERY COMPLEX ANIMATIONS ."

Animation

by Jae Ham

General Tips and Techniques: Part Two
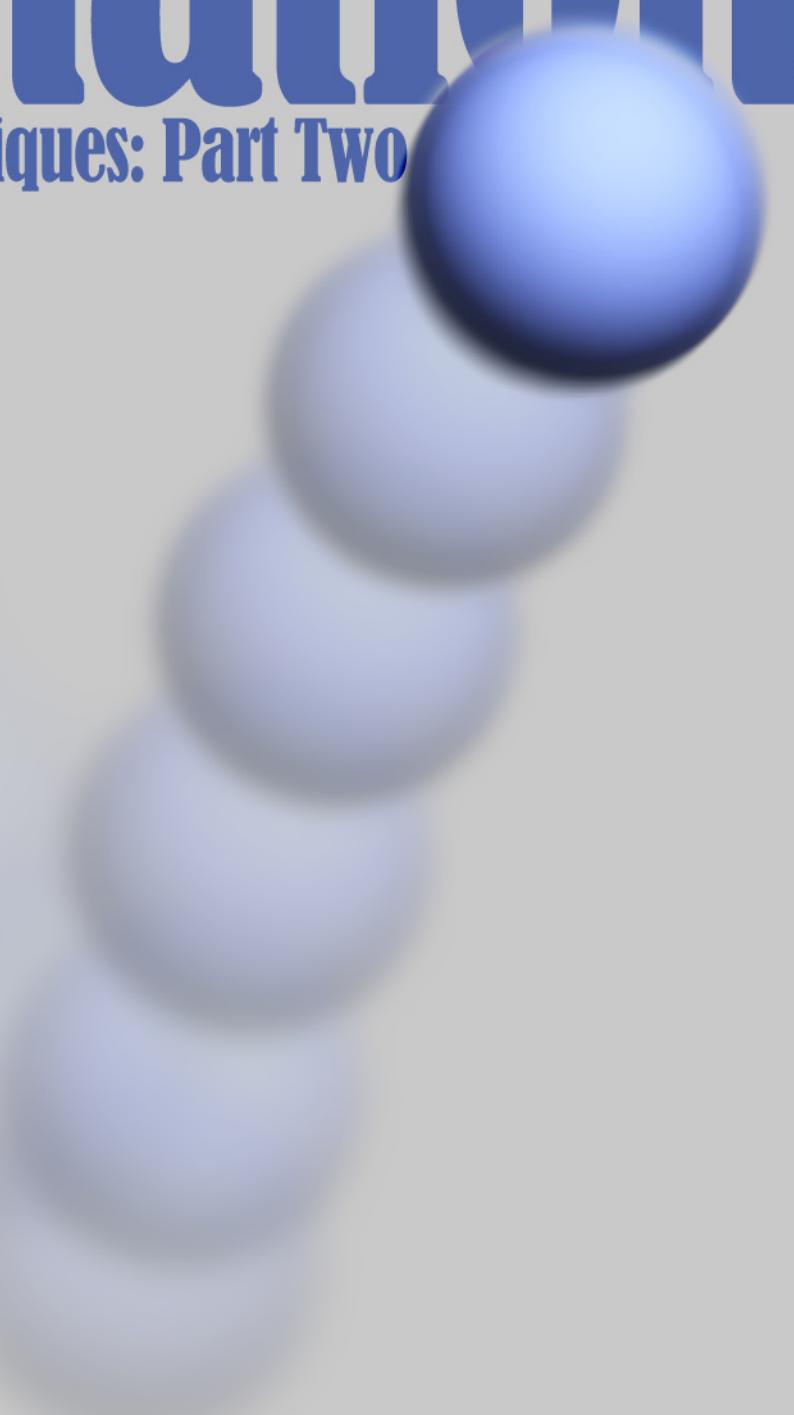
In this second part of his four-part tutorial series on Animation, Jae Ham examines the three stages that make up any action, and how the animator can convey different emotions and words through movement ...

Animation part 2

A Boost to your animation workflow

Hello there. If you studied the examples that I introduced you to last time, you should now be able to comfortably set keyframes and move objects the way you want. Since the computer is our main tool, I suggest you really go over these basics properly. Being able to move around comfortably inside the dope-sheet and graph-editor view is crucial.

Spending a day or two really thinking about the workflow of animation is going to be very helpful as well. For instance, by now you may have noticed that 'set-key' and 'delete-key' are two of the commands that you use again and again. By default 'set-key' is either mapped to keyboard S or K depending on your chosen application but it's important to find out what these shortcuts are so that you can use them quickly and efficiently.

Action

Fig01

However, don't feel that you have to stick with the default settings. Change the keyboard setting to suit your style or setup your own shortcuts by placing them where your hands can comfortably reach.

When I'm animating, I generally use the following commands the most:
- One frame forward
- One frame backward
- Set keyframe
- Delete keyframe

I hear you say "That's pretty silly …" but please trust me and take the time to find out what keys these commands are assigned to. I'm stressing

this basic point because the more keyboard shortcuts you use, the faster you can work. And making sure that you know your way around the dope-sheet and graph editor will prevent you from developing bad habits and wasting your time.

Let's Animate!

Okay now, enough on the computer stuff, let's do some animation. In this second part of the tutorial series, we will be looking at what movement is made out of and how we can convey emotions and words through movement.

When we think about movement, most of us just think about an action (throwing, hitting, kicking etc.). But if we examine the action more closely, we can see that it's divided into three parts:
- Anticipation
- Action
- Release.

Anticipation: The preparation of an action. Anticipation accentuates the action that follows it by making an opposing movement. For example, when you throw a ball you pull your arm back as far as you can before you release the ball. This is the anticipation part of the movement, which is then followed by the main action when the ball is thrown. Additionally, if the action is going to carry a lot of force, with fast pace and speed, then the anticipation stage has to be lengthened accordingly.

The term 'anticipation' also refers to a film technique where a film-maker draws the

Action

Fig02

Main Body Translation
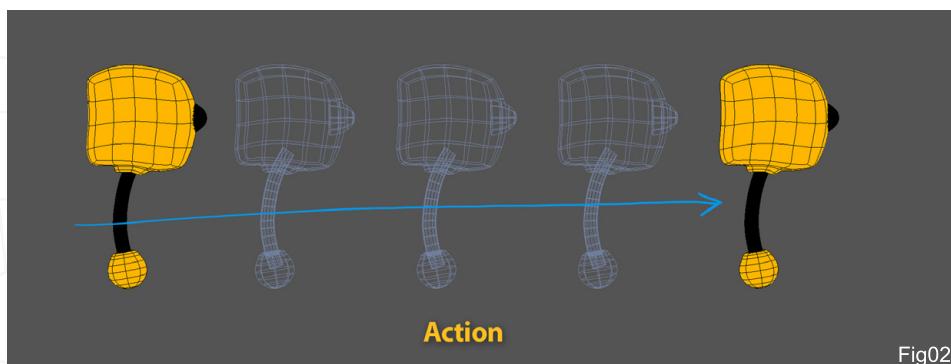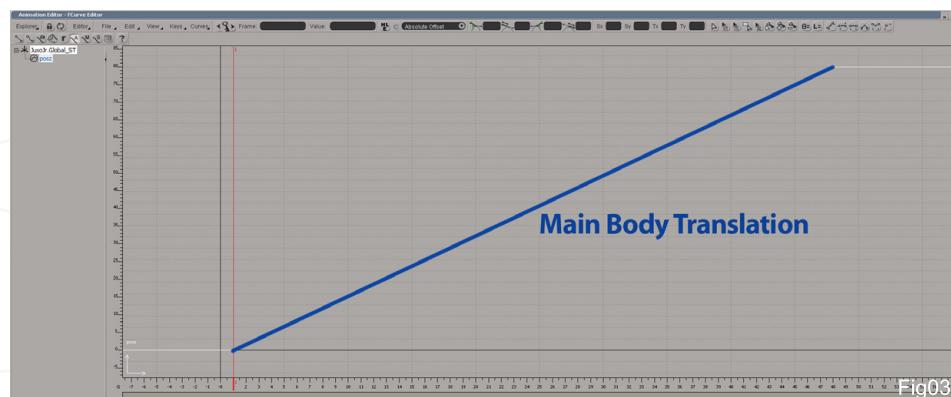
Fig03

Anticipation

Action

Fig04

audience's attention to a particular point or event which makes them expect something. **Action:** The main action is always linked to the anticipation that precedes it and is greatly accentuated by the opposing motion of the anticipation stage. The two stages have to be in harmony otherwise the entire movement will be very unnatural.

Release: Releasing the energy generated from the action. If the main action was very forceful and heavy, the release stage is directly affected by it. We will look more into weight shifting in next tutorial but basically if the motion is fast, weight will be shifted just as much.

So to summarise:

Anticipation

- Preparation of the main action.
- Attracts the attention of audience to X.
- If the main action is going to be very fast or very slow, then the duration of anticipation should be altered accordingly.

Action

- The main action performed by X.
- X is accentuated by opposing anticipation movement.

Release

- Ending of the main action.
- If the main action is very fast or slow, weight will be shifted accordingly.

Here I have four different ways to move a character from A to B.

1. Action only

This example has no anticipation or release stages and it shows an action which can't really exist by itself. **Fig01** show the starting and ending position of our little character. **Fig02** shows our character at frame 1---12---24---36---48. Notice the equal distance?

Of course there are times when this kind of robotic movement is needed, but generally we

don't want to see movement like this because there was no sense that the little character was thinking or alive. And since we just failed to achieve the most important thing in animation - making something come alive - there is no doubt that this is bad animation. So it's an important type of animation to avoid (**Fig03**).

2. Anticipation & Action

This produces a much better movement than the first one. Instead of just going into action, our character prepares for the action by moving backwards slightly. But why would he want to do

Anticipation

Action

Fig05

Main Body Translation

Fig06

Anticipation   **Action**   **Release**
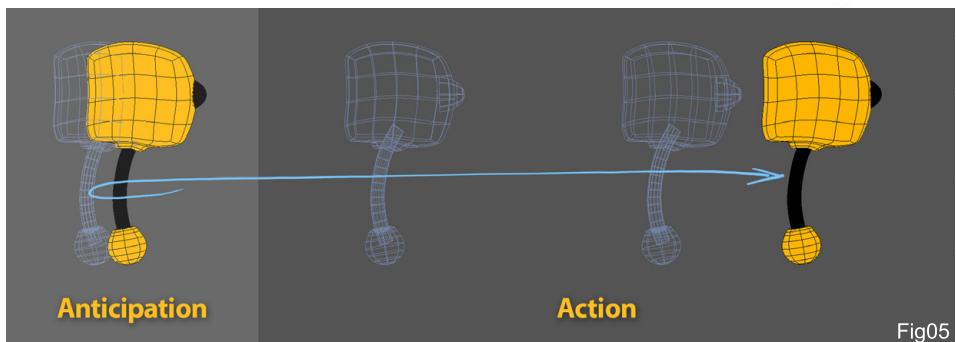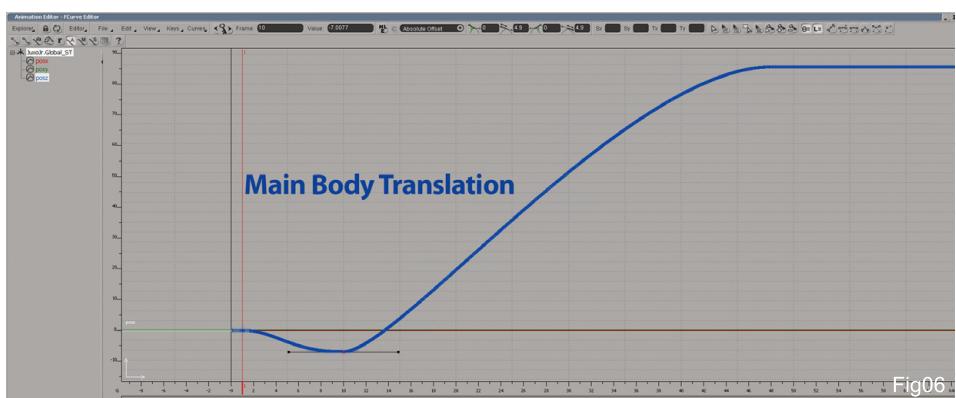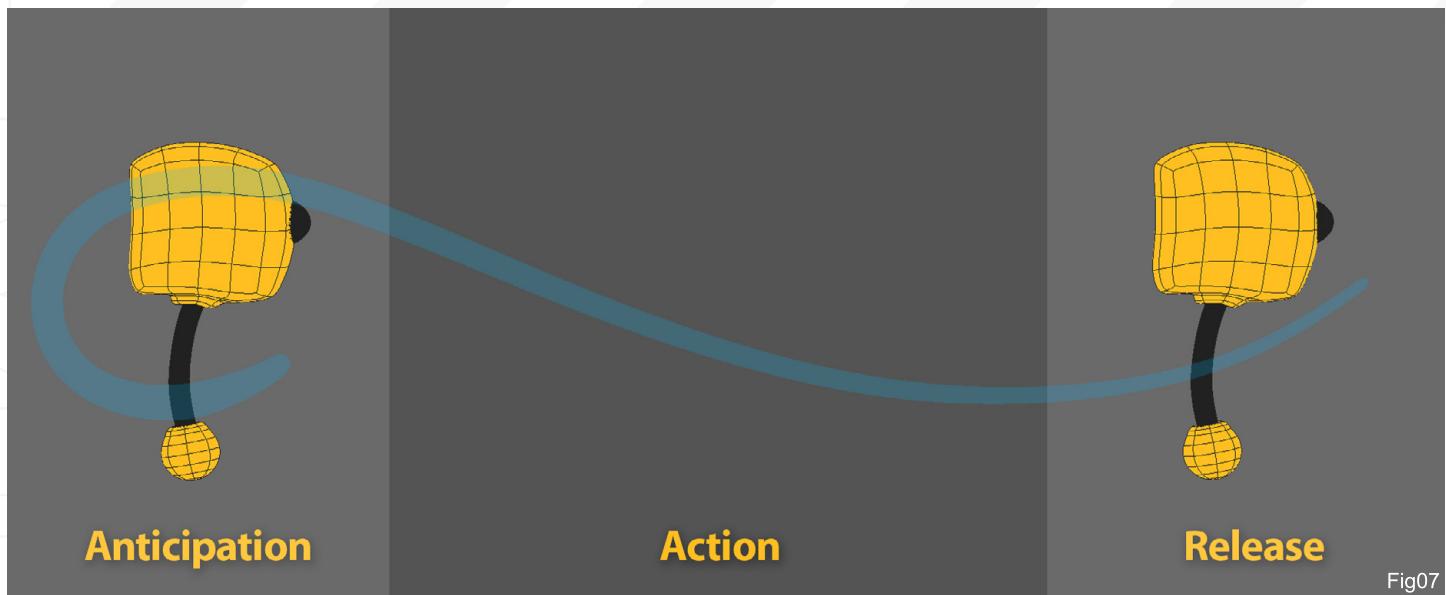
Fig07

that? Perhaps he saw something that interested him? No matter what the answer is, this is where the fun of animating begins (**Fig04, Fig05** and **Fig06**).

The way the movement ends still looks very bad. While it has the ease-out motion, the character still looks very stiff, don't you think? So let's move on to the third movement and see what both anticipation and release can bring to a motion.

3. Anticipation, Action & Release

Finally we have all three in one motion. Do you notice the big blue flow line? I put it there not as an arc line, but to illustrate the rhythm and flow of the motion. If you don't know what arc lines are, please don't worry because we will go into them in more detail later. For now let's just concentrate on the movement (**Fig07 - Fig09**).

This is like a working procedure. We want to move the character forward. That's our goal. But how? We haven't set any keyframes just yet. So in our mind or on paper we draw the 'big blue line' to plan our character's motion. At this stage, it's really important to think about what feeling you want to achieve through your movement. Based on this goal you can start to set the key frames.

4. Anticipation, Action & Release Variations

You may have noticed the layering approach to animation that I've been using. While the first example (**Fig01 - Fig03**) by itself is really bad, it serves as a very good first step which we can then build on to develop the animation:

1) We decided the distance we wanted the character to move.

2) The start and end positions remain the same but we've added a little bit of anticipation to the movement by moving the character backwards at the beginning, then slowing the character down at the end.

3) Leaning backward and forward is added to accentuate the 'gathering' of energy in the anticipation stage and illustrate the 'fading away' of energy in the release stage. Just by rotating little on the base of the character we have added so much detail.

Anticipation   **Action**   **Release**

Fig08

Main Body Translation

Main Body Rotation

Fig09

Anticipation   Action   Release

Fig10

Starting with a broad movement, and then adding smaller and more specific details in stages, we are able to build very complex animations (**Fig10, Fig11** and **Fig12**).

In the fourth example I have added even more details, but I have put it here primarily to show you the unlimited number of ways that there are to move a character from point A to point B. As clichéd as it may sound, you as the animator really get to play the part of the actor for the character or thing that you're animating. By subtly changing aspects of the movement, you can create a range of different emotions. If your character moves quickly, is it angry, or just in a hurry? If it moves slowly, is it reluctant, or upset about something?

Anticipation   Action   Release

Fig11

So let's start with a very simple character like this and try to move it from point A to B in as many different ways as you can think of. By practicing this yourself, I am sure you will learn much more quickly and effectively than if you were simply being shown what to do. Have fun!

Jae Ham

For more from this artist visit:

http://www.jaeham.net/

Or contact:

jae@jaeham.net

Main Body Translation

Main Body Rotation

Head Rotation

Fig12

"IF IT'S TO LOOK BELIEVABLE THEN IT'S VITAL TO GET THE FORMS CORRECT BEFORE GOING ANYWHERE NEAR THE DETAILING STAGE."

For all of you out there who have heard of, but are unfamiliar with, ZBrush then this new 7 part tutorial series by Wayne Robon is for you. The Total Beginner's Guide to ZBrush is an excellent starting point to get you into the world of ZBrushing

BEGINNER'S GUIDE
TO ZBRUSH PART 3 BY WAYNE ROBSON

BEGINNER'S GUIDE TO ZBRUSH PART 3

CREATED IN:

ZBrush

INTRODUCTION

Up until now in this series, we have been creating what amounts to a fairly generic medium-resolution sculpture that could be turned into a whole host of different creatures. The advantage of knowing h+ow to block out common forms such as these is that each time you sculpt something in ZBrush that is human or 'human-esque', you will be refining what you learned the last time you did something vaguely similar. It is in this way that we improve as digital sculptors. Making mistakes is a positive thing, because without them we would never learn and improve. So an artist who never makes mistakes is an artist who never grows artistically (**Fig01**).

ADDING THE EYEBALLS… MAKING EYEBALLS FROM A SPHERE PRIMITIVE

As we have taken this model about as far as we can in the eye area without the eyeballs being there, it is time that we added some (**Fig02**). These will help us when it comes to making sure that the proportions of the eye area correct, and they'll also help us to sculpt the upper and lower eyelids correctly later in the series. To add our eyeballs we are going to use the default ZBrush
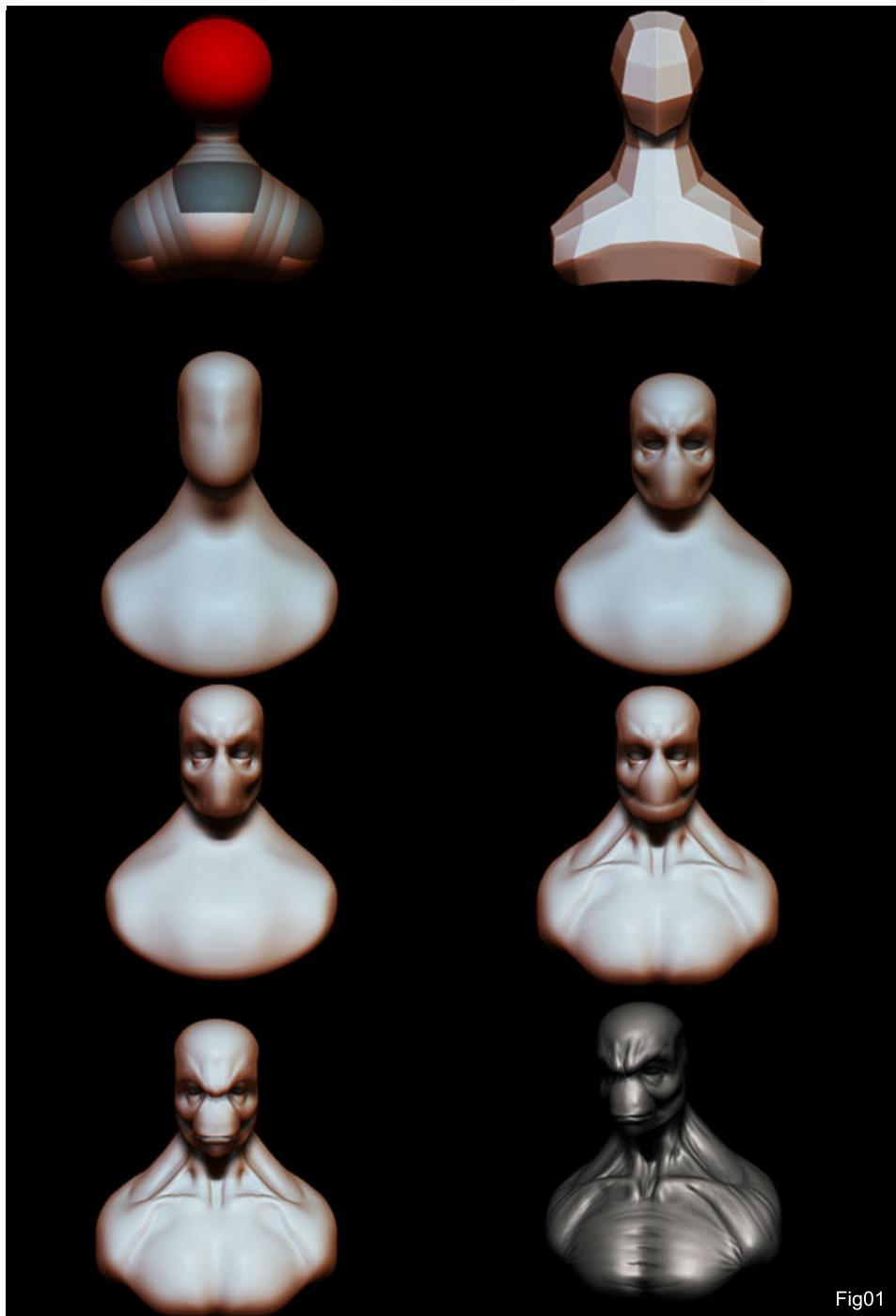
Fig01
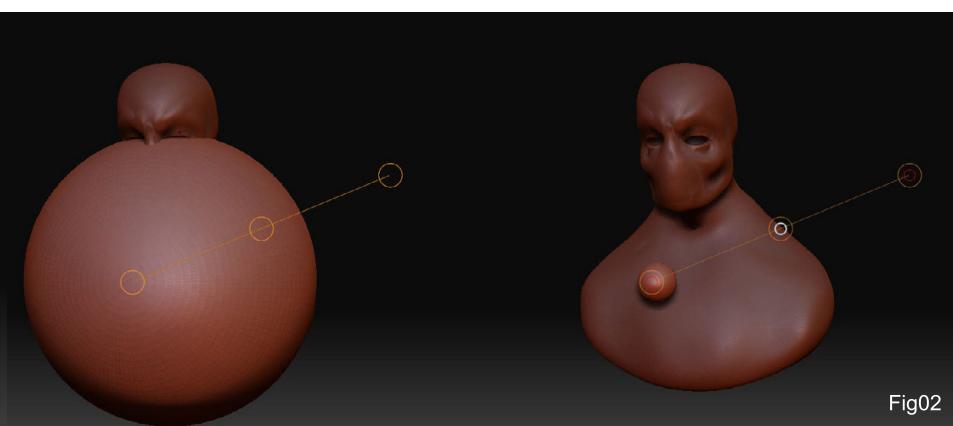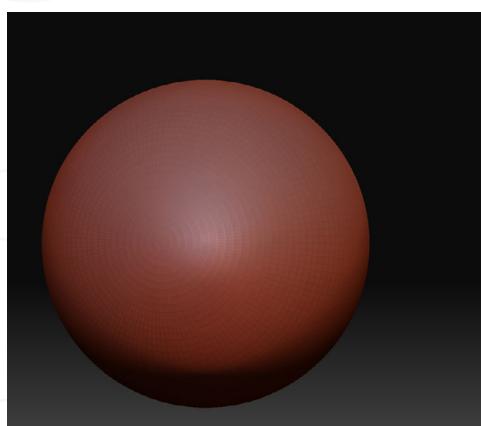
Fig02
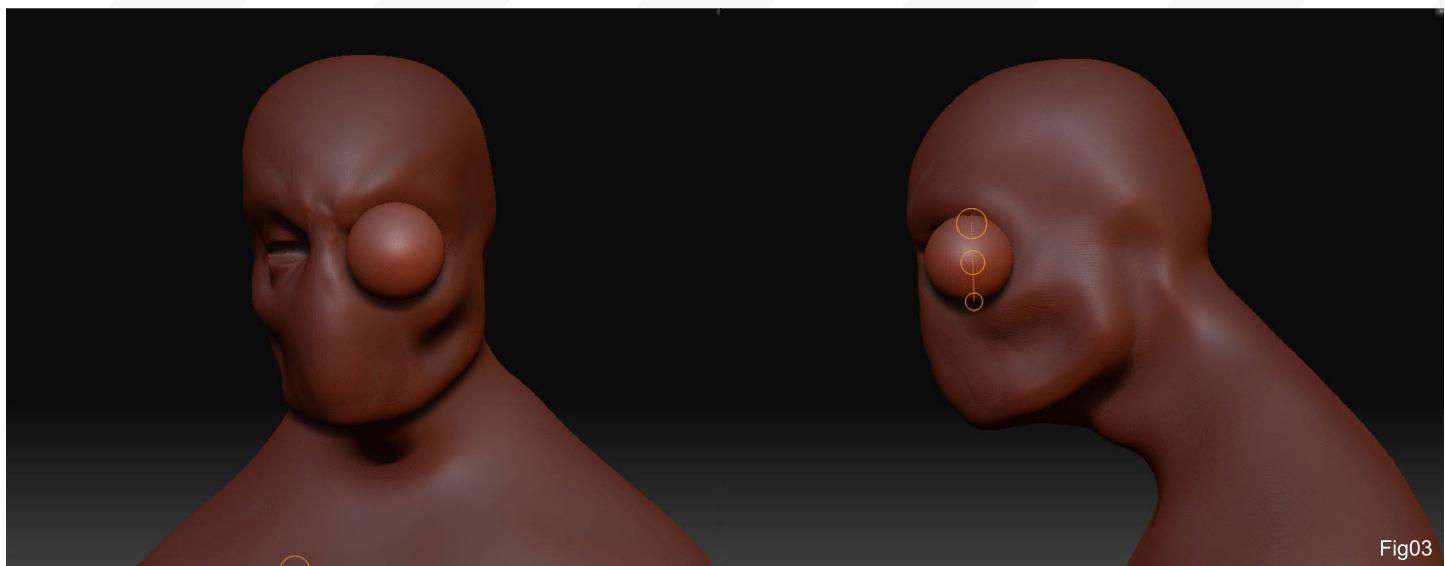
Fig03

sphere primitive that is available in your tools menu by left clicking on your current tool. This will bring up a pane that contains many other primitives and tools (along with any others that you have currently loaded into ZBrush at the time). Select the sphere primitive and it should appear loaded into the viewport on its own. At this time we can't use this sphere because it is still a 'primitive' and not a polymesh that we can sculpt (**Fig03**).

To make this primitive into a polymesh, simply look at the very top of the tool menu and press the 'Make polymesh3D' button. This will then generate your polymesh from the primitive sphere and load it into the viewport in exactly the same position as the primitive was. So it looks for the entire world as if nothing has happened! So now we have a sphere that we are going to make into not one, but two eyes. You may have noticed that the main model that we were working on is also visible in the tools menu near the top. If you click on this now then it will once again become active in the viewport and we can start putting the sphere into the right place as one of the eyes.

ADDING THEM TO THE MAIN SCULPT

First of all, go to your Tool menu and open up the section marked 'SubTool'; this is where we will add the eyes, with each one being a

separate SubTool. So look at the bottom of the 'SubTool' section and click on the 'Append' button. Once again, this brings up your pane with the other ZBrush tools in it. You should see your sphere polymesh on the very top line, so select that and it will then be added to your current model as a SubTool. You will notice that the size and position is all wrong at the moment, but don't worry as we'll be sorting that out next!

Our next big job is to resize and position this eye in the correct place. Before we continue, let us recap again on how the transpose lines work for our transformation tools, such as Move, Scale and Rotate. At the end of each line you will see a circle with another in the centre of the line. By left-clicking and holding down we can drag the transform line into position by doing so on the edges of any of the circles. If you drag by the ones on either end then that end

will move, with the other end acting as a pivot point. By dragging by the edge of the centre circle you will be able to drag the whole action line itself into place. Clicking in the centre of each circle works in a similar way. Clicking and dragging in the centre of either of the two circles on the ends of the action line transforms the tool in a uniform way (depending on the whether the Move, Scale or Rotate is currently active). Clicking and dragging on the centre of the centre circle will transform in certain directions. So if, for example, you had the Scale transform active with the action line vertically on the centre line of your model, and you dragged on the centre of the circle at either end, it would scale up or down the entire model in a uniform way. While dragging, using the centre circle would scale the model horizontally, but not vertically (**Fig04**).
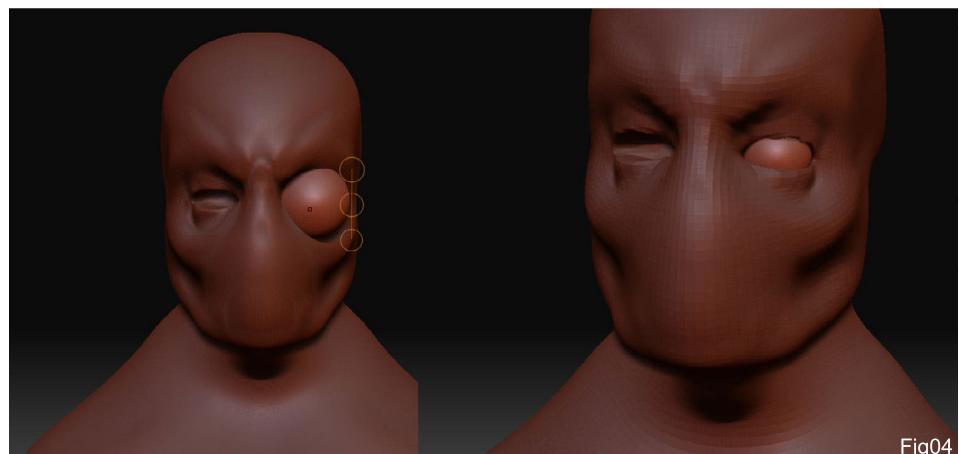
Fig04

Make sure you have the sphere polymesh as the active SubTool by checking that you have it highlighted in the SubTool section of the Tool menu. First of all, select the scale transform tool and then left-click and drag an action line outwards from the centre of the Sphere. (If you hold down the Shift key at the same time you can constrain it to the nearest surface and stop it whizzing off backwards in the Z direction in the viewport). Now, using the outer-most action line circle, left-click and drag in the centre of this circle and scale the sphere up or down, as needed, to an approximate size that looks right to you.

We now change to the Move transform tool. You will notice that our action line stays in the same place that we left it before we changed from the Scale transform tool to the Move transform tool – feel free to move your action line into a place that feels good to you. Now it is a simple matter of moving the sphere into place, as our eye. Be aware that when you've just started using action lines and transform tools,
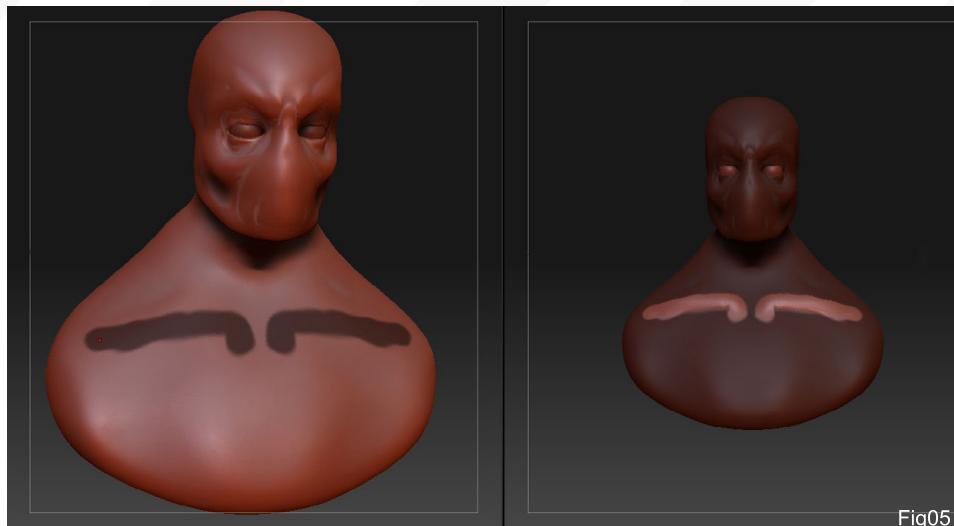
Fig05

it's perfectly normal for it to take a little while for you to get used to them. (It's much the same as switching from driving a right-hand car to drive a left-handed one - it takes a little time to adjust!) Once you have your sphere in the right place you may need to resize it again to make sure it fits comfortably into place.

Using your move brush, and with your main model active in the SubTool palette, move the

Fig06

eyelids into position over the eye. Use your painted masks (made by holding down the Ctrl key and painting where you wish it to be) and get everything into the right place. Give yourself plenty of time; getting the eyelids into the correct position can take a little time when you're first starting out. Once you're happy that they are in the right place, and the lids look correct (as shown), make your eyeball the active SubTool.   At the top of the tools palette you will see a button marked 'Clone'; press this to make a copy of the eyeball, which will now be in your tools pane but not active. Add this as a SubTool, again by hitting the 'Append' button.

It will appear as if nothing has happened yet because both eyeballs now share exactly the same space. So open up the 'Deformation' panel and hit the 'Mirror' button to correct this. You should have two eyeballs in your sculpt now, so change back to your main SubTool again, ready to continue.
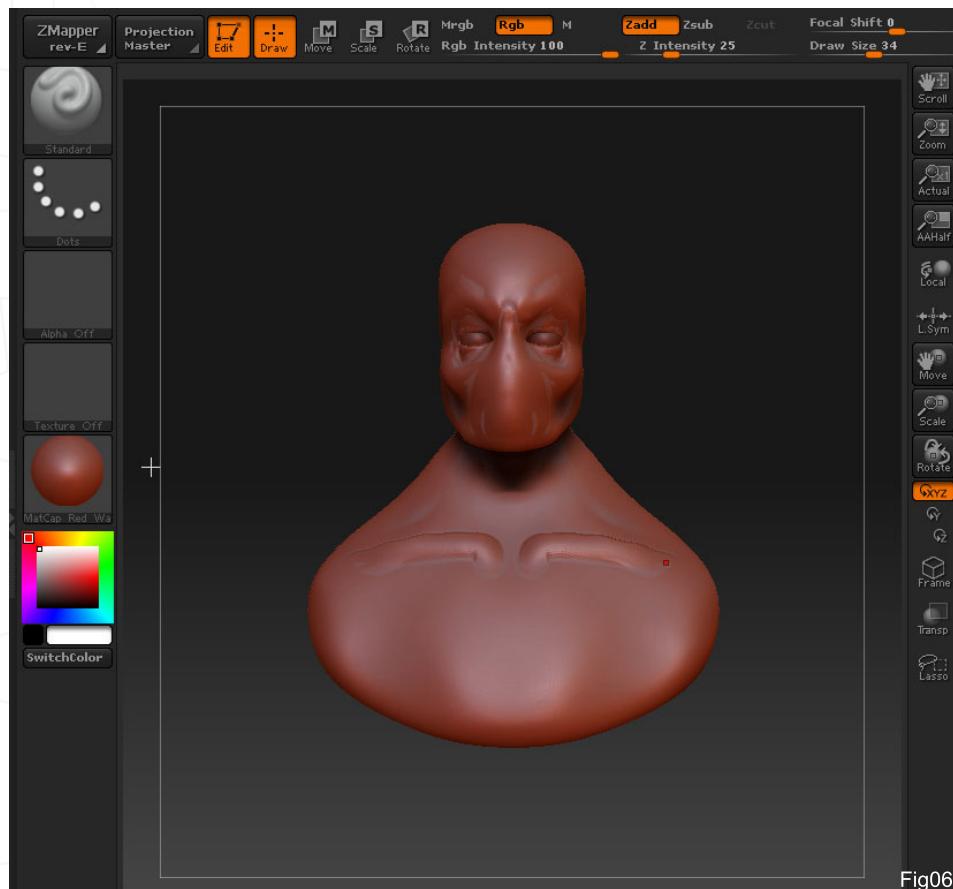
CONTINUING WITH SCULPTING

Holding down the Ctrl key, paint a mask for the clavicle (as shown), remembering that if you hold down Ctrl + Alt you can paint to remove an area from your mask (**Fig05**). Using your Standard brush (with the default settings), simply run it over the area to block this in. Then smooth the bottom area of this where it intersects with the chest area (**Fig06**).

We now paint another mask, this time to define where the sternocleidomastoid muscle runs from behind the ear (on a human) to the ends of the clavicle beneath the bottom of the neck, as shown. Depending on how well-built and muscular your character is, you may also want to add a mask for the tendon running from the bottom part of the previous masked area to the end part of the clavicle as well (the sternocleidomastoid muscle splits into two parts where it meets and joins the clavicle). Now change to your Clay brush and select the first round alpha (alpha number 01) and run it over these areas with a ZIntensity of 50 and a size of 74 (**Fig07** and **Fig08**).

Hold down your Shift key to take away any sharp edges and lightly smooth the area you've just done. Remember the idea is to soften these areas, not to wash them out. Using the same brush, lightly build up the back of the jaw area (as shown) and remember to smooth things out again a little afterwards. If you spot any other areas that you feel could do with a very light touch, feel free! Just don't go mad; we'll be going back to the torso again later.

Blocking Out the Torso

Again, I want you to mask off the areas shown, as these will help us to define where each muscle group will be and as such make the job of blocking the torso out a bit easier.
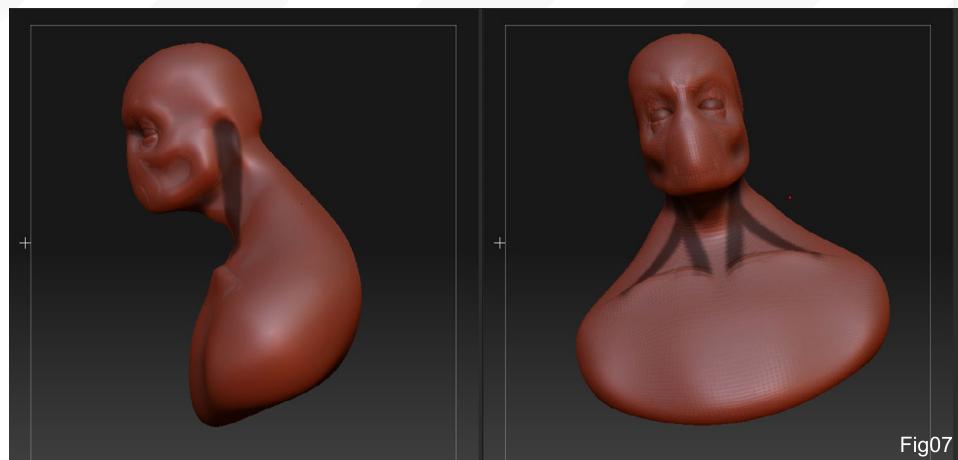
Fig07
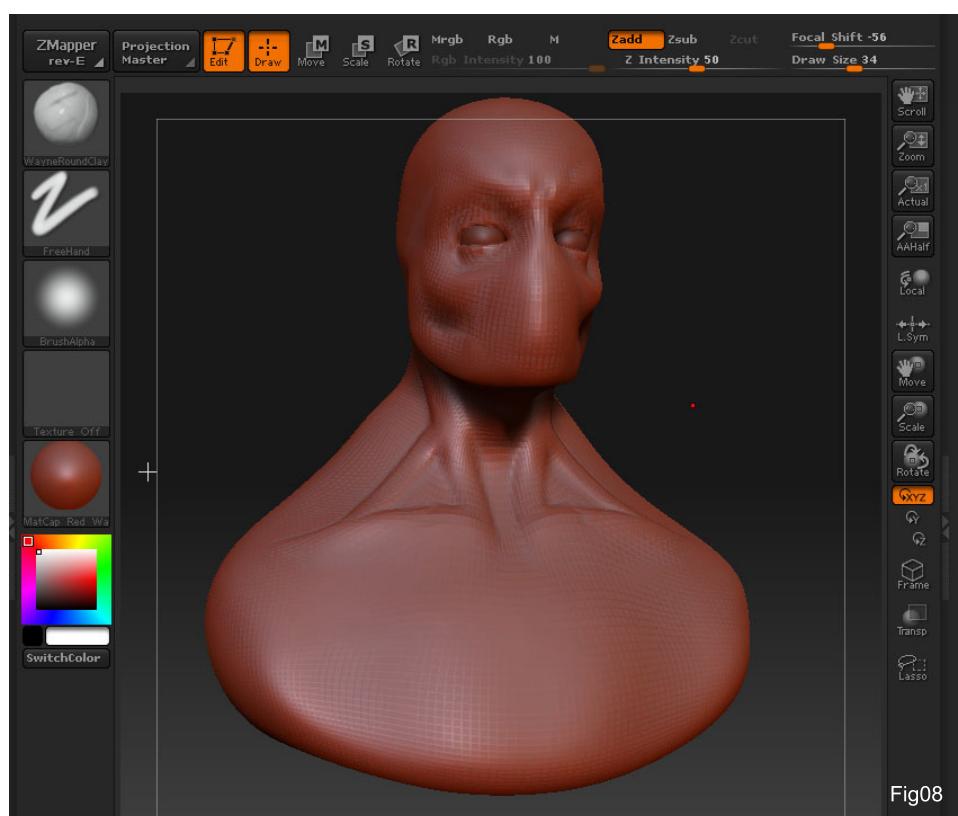
Fig08
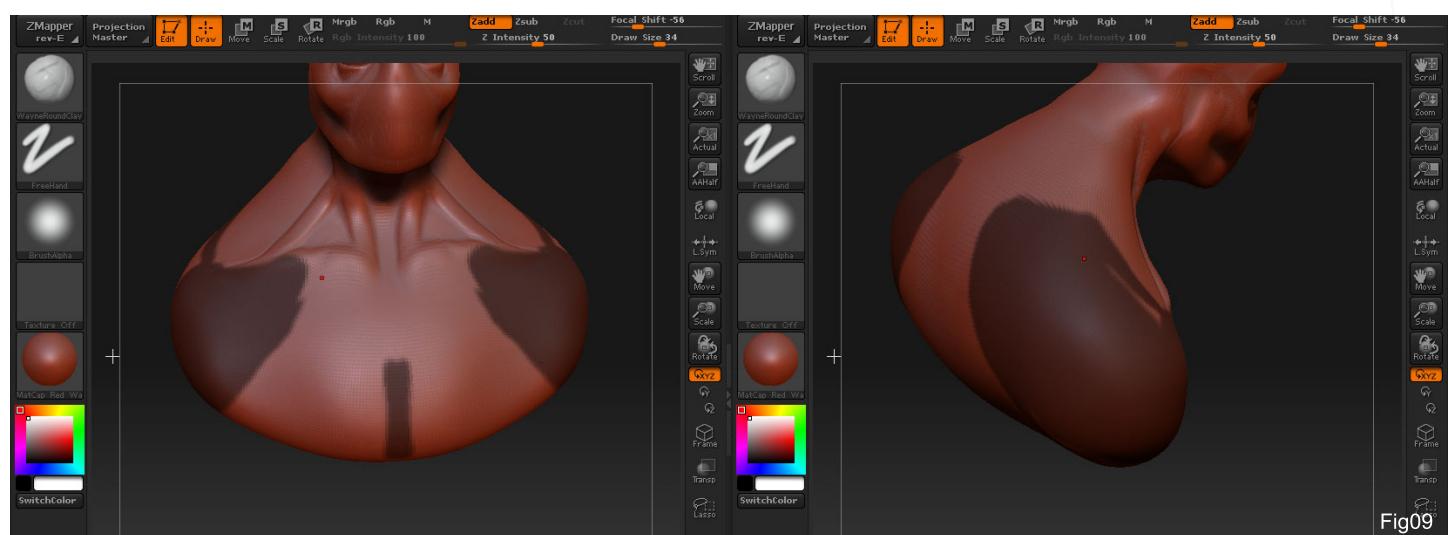
Fig09
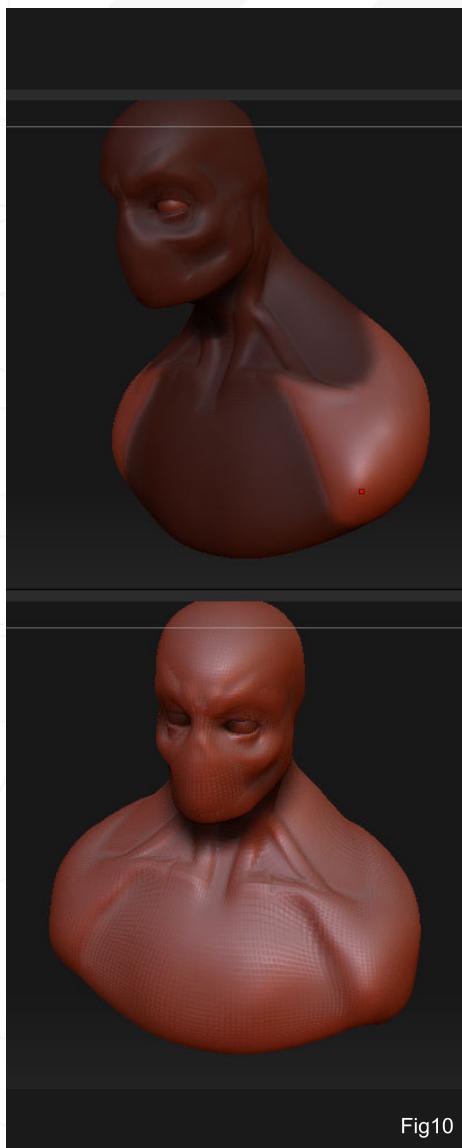
Fig10

Remember that because this is a series for beginners, I've somewhat simplified the forms. The more advanced readers can feel free to change this area on their own sculpts to something more complex if they want to (**Fig09**).

Once the masked areas for the deltoid are drawn on your ZBrush sculpt, use your Inflate brush with a ZIntensity of 10 and a size of 54 to increase the volume of them. For any areas that require a lot of volume to be added, such as the back where the shoulder blades are, use the clay tubes brush and smooth the area out afterwards. This will save considerable time when blocking out (**Fig10**).

Next we need to add some volume to the pectoral area of the chest, so for this we will use a new brush: the 'Magnify brush'. The magnify brush will magnify an area under the cursor to help us add volume. In this case, we want a ZIntensity of 25 and a size of 84 and a very light tough. If you have too heavy a hand he will end up looking like he's taken way too many steroids, so be careful and remember to use the undo button! Smooth this area out, as shown, and make sure that there is a slight indentation next to the upper part of the deltoid/clavicle intersection area (**Fig11**).
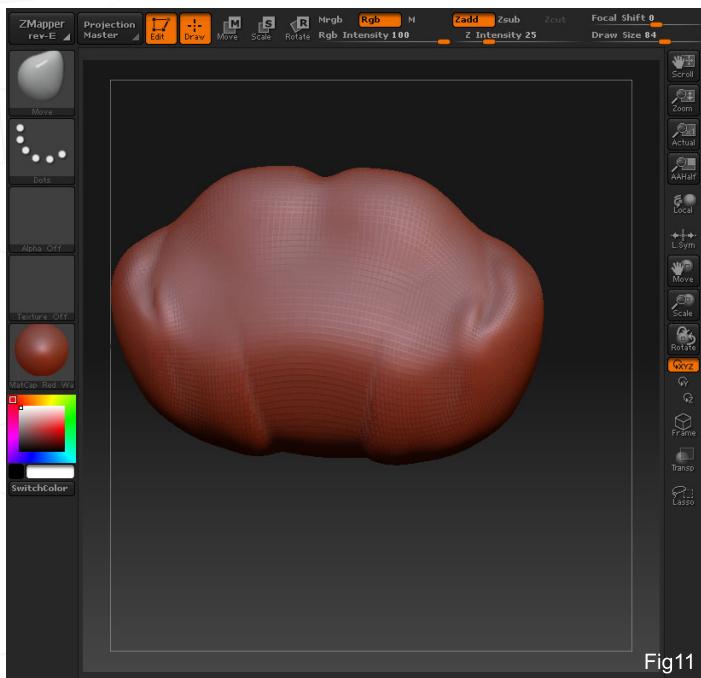
If you now flip to the underside of your model and use the Move brush, you can start to add some shape to the pectoral area and correct any mistakes before we continue onwards in the next part of the series.

In Closing…

Now we have our digital sculpt looking a bit more interesting (**Fig12**), in the next part we can start to refine him to some degree. Although it can be tempting at this stage to go crazy with alphas and add masses of detail, I would urge restraint (using a straight jacket if need be!). The main reason is that, as I've mentioned before in this series, if it's to look believeable then it's vital to get the forms correct before going anywhere near the detailing stage. For next time, practice all that you have learned so far and make your first sculpt of your own design using the things you have learned so far from this series. Catch you next time!

Wayne Robson

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wayne@dashdotslash.net
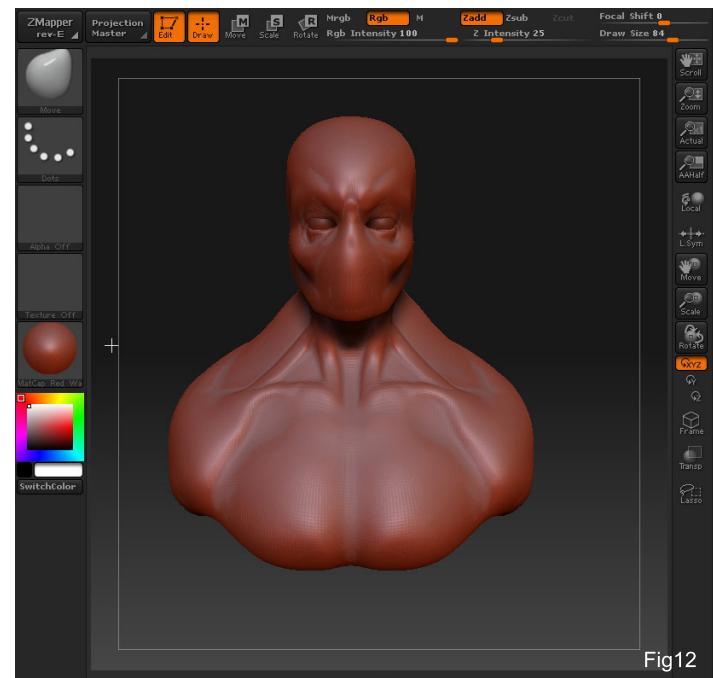
Fig11

Fig12

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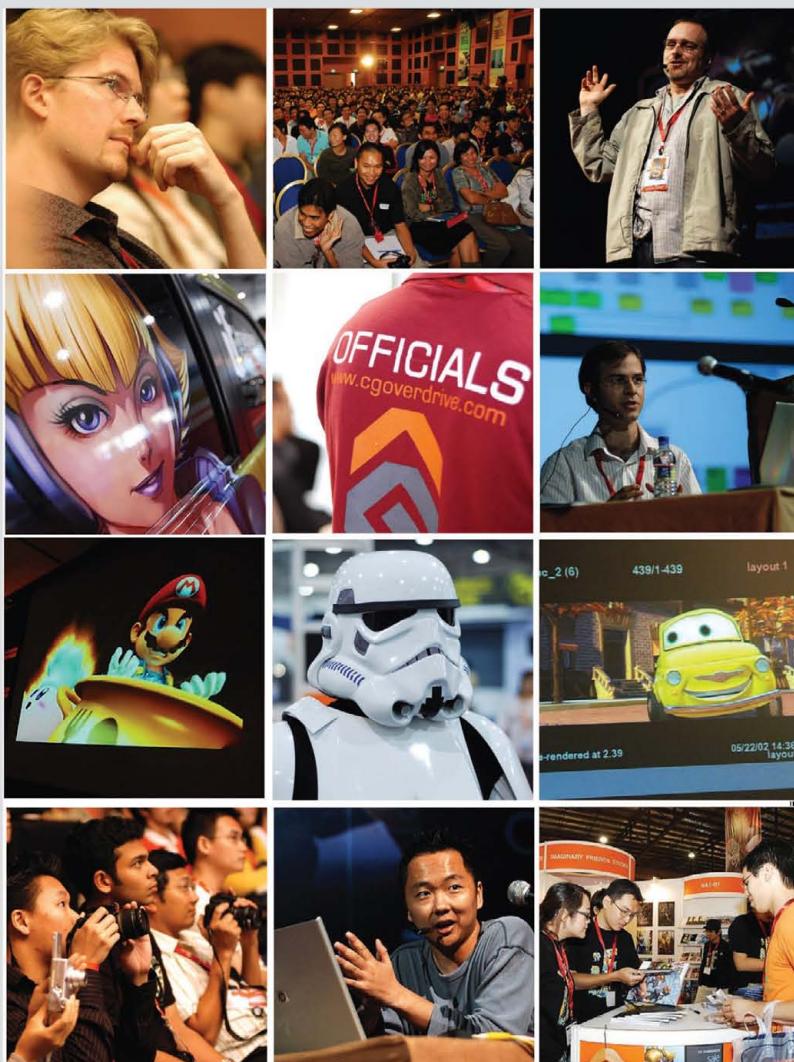
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"As soon as I'm pleased with a concept, I immediately start working in ZBrush. To me, ZBrush has proven to be the most artist-friendly modelling package I've ever used."

Richard Rosenman takes us through the production of the character 'Billy Bob Boone.'

Making Of

Billy Bob

Billy Bob

CREATED IN:

ZBrush

INTRODUCTION

Welcome to the making of "Billy Bob Boone". This tutorial walks you through a brief explanation of the steps involved in creating this character, from start to finish. It is recommended that you understand the fundamentals of computer graphics and animation, as this is meant for intermediate to advanced users.

"Billy Bob Boone" started off as an idea for the "Strange Behavior" competition, held in late 2007. The idea was to create an image in which oddity is captured in any way, shape or form. Since I specifically enjoy character

Fig01

Fig02

development, my idea was to develop oddity through expression – to create a very odd-looking character with a very unusual expression.

PRE-PRODUCTION

As with any character, the very first incarnation is always created on paper. **Fig01** shows a rough sketch of the initial idea, and it's interesting to see how it will evolve throughout the development process.

It is important to notice that the sketch is very loose, as are all my initial designs. I find that gestural drawings tend to capture much more emotion and expression than a finely-tuned one.
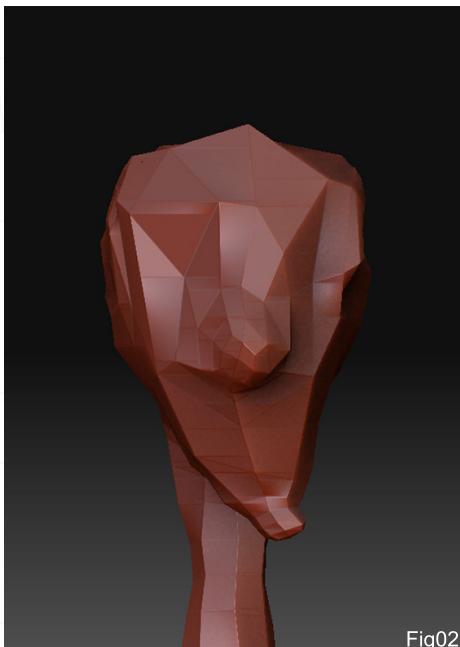
PRODUCTION

As soon as I'm pleased with a concept, I immediately start working in ZBrush. To me, ZBrush has proven to be the most artist-friendly modelling package I've ever used. Since I am only an intermediate ZBrush user, I decided to improve my modelling skills by developing this character directly from ZSpheres – completely from within ZBrush, as opposed to importing a base mesh.

ZSpheres provide a very powerful and versatile method of modelling for artists using ZBrush. Generally speaking, spheres are placed in any arrangement and connected together to form

a rough skeleton. An adaptive mesh can be displayed at any time over the spheres, thus allowing you to create base meshes very quickly and easily. If you don't like what you see, you can simply re-arrange any of the spheres and see how this affects your adaptive mesh. ZSpheres offer many more powerful features than just that, but since I'm using it strictly for modelling, I will limit the discussion to this.

Once I have arranged the ZSpheres to form a base mesh that I'm pleased with, I collapse the model in order to start working with it. **Fig02** shows the very first mesh generated by the ZSpheres. Looking at this, you'd wonder how on earth any respectable model could be developed from it. The poly-count is extremely low but this is important for us so that we have a lot of play with the forthcoming subdivisions.

The unique feature of ZBrush is that it allows you to be able to use a low polygon mesh and continue subdividing it until you have enough polygons to fully-sculpt with it. Once you're finished, you convert the high density mesh to a displacement map and achieve the same results but with a significantly lower-density mesh. What this means, for me, is that I will start with the lowest density mesh I can, sculpt it until I get a shape that I like, and finally subdivide it again. This will continue until I reach a level in which I can sculpt all the details I would like to add to the character (or until your computer decides to explode!).

When the base mesh has been sculpted into a shape I am pleased with (**Fig02**), I subdivide and continue my modelling process.
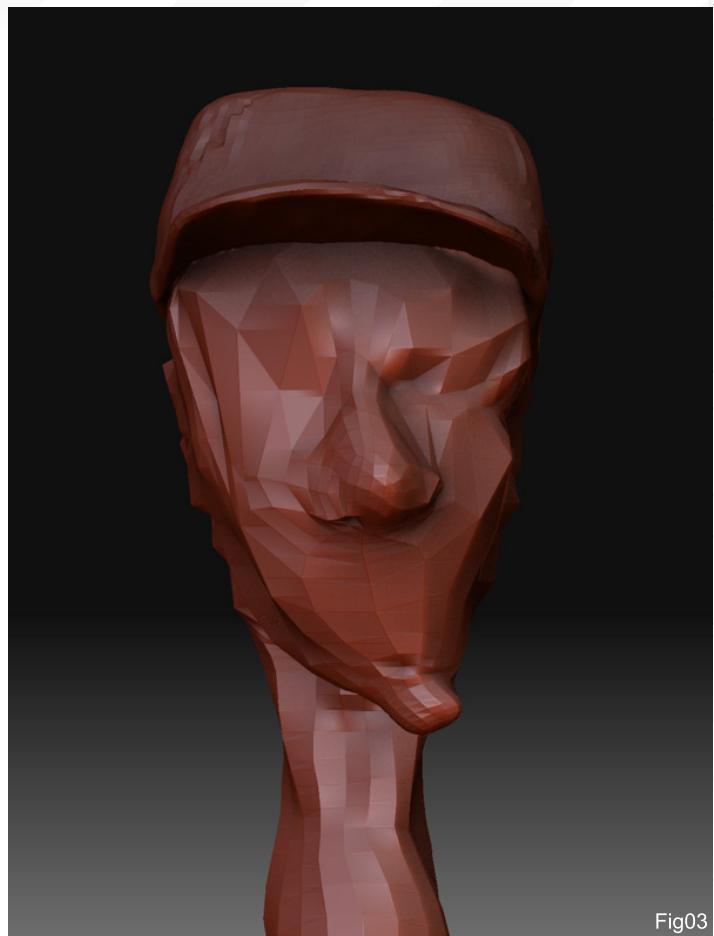
Fig03

The next image shows the character with three levels of subdivisions (**Fig03**).

It's still a terrible mesh but that's not important right now. What is important is to be able to continue shaping the model into a form that is similar to my initial sketch. This is beginning to happen – the chin and mouth are formed and twisted, the nose is more distinct, the shape of the face has been refined and the cap has also been roughly created. In this case, the cap is a "sub-tool", which means it's a separate mesh that can be worked on within the same scene using its own subdivision levels. This is important because we will not require as many polygons for the cap as we will for the face, and sub-tools allow you that flexibility. In addition, future objects will also be created as sub-tools, such as the eyes.

Once I have sculpted this level to a form I'm pleased with, I subdivide again and continue my modelling process. **Fig04** shows the character with five levels of subdivisions.

As you can see, the character now has a significant amount of detail and is beginning to take a more distinct form. Smaller detail areas, such as the nostrils, mouth, eyelids and ears, now have more definition because I have more polygons to sculpt with.

Fig04

Generally, it's advisable to leave very fine details for last (such as skin pores, cuts, irregularities, etc.) since they require very high levels of subdivisions. However, since our cap is smaller and therefore has a much higher polygon density than the face, we can start creating these details here. The stitching on the sides of the cap are now roughed in, as are the rips and tears on the material.

The most obvious problem with this model right now is the severe stretching of the right eye polygons. While this may look terrible right now, I know that I will be sculpting this area in more detail later on, and the eyeball will also be covering that up. Therefore, I am not concerned with it at this time.

As I continue sculpting, my character continues to be subdivided until I reach the eighth subdivision level, which proves to be enough detail for me. The image below shows the character with eight levels of subdivisions (**Fig05**).

 At this point, all my sculpting has been completed. If you look closely, you can see skin creases and pores have been painted in and all the areas that were lacking detail now have it. The previous problematic right eye looks fine at this level of detail with the eyeball sub-tools properly dropped in. The cap has also had further sculpting details added, including cloth texture and more detail in the tear.
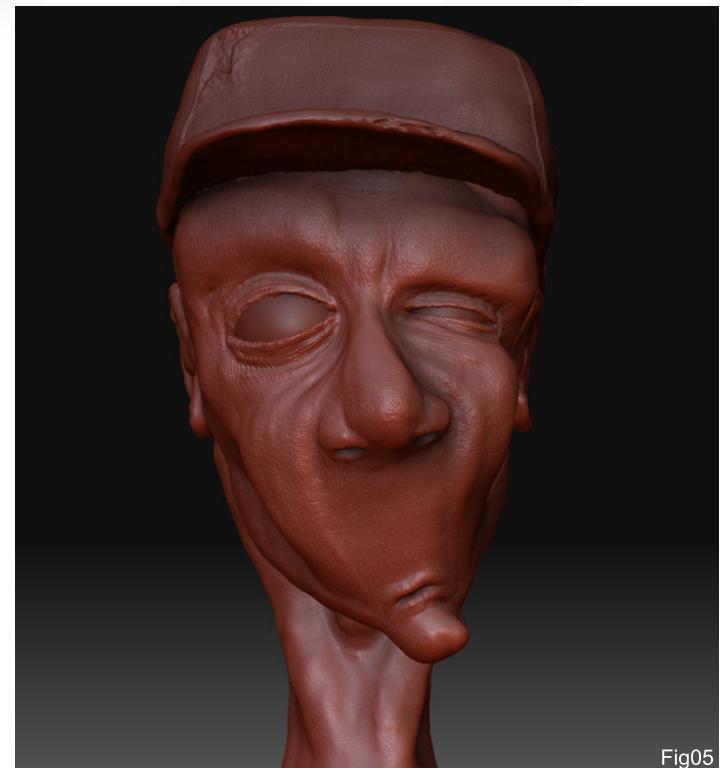
Fig05

You can see that the lower neck has the least amount of detail at this point. This is because I intend to cover up that area with clothing so I will use my time effectively and only work on the areas that will actually be visible.

Once I'm completely satisfied with the model, it's time to texture it. Although I used to formerly do all my texturing within Photoshop using unwrapped UV's, I've since changed my workflow to painting directly on the model, again within ZBrush. The difference in quality by working in this manner is enormous. You see exactly what your character will look like as you paint, instead of guessing where details should go and distorting them to make up for unwrapped polygons.

I start texturing "Billy Bob Boone" by applying large patches of colour and, just like subdividing the model for more detail, I add smaller and smaller areas of colour once the larger ones are laid in. Again, I have to use my imagination to some degree and try to imagine what this will eventually look like once it has been properly lit. It may not look as striking as I would like it to be in ZBrush, but eventually it will in the final render. **Fig06** shows the character with finished ZBrush textures.

Not very exciting, is it. That's okay. We're dealing only with diffuse colour at this point and we're not seeing highlights, shadows, reflections, diffuse glows, ambient occlusion, GI, etc. Even though I will be texturing some objects outside of ZBrush, such as the eyes, it still helps me to colour-code them white in ZBrush for a more accurate representation of my character.
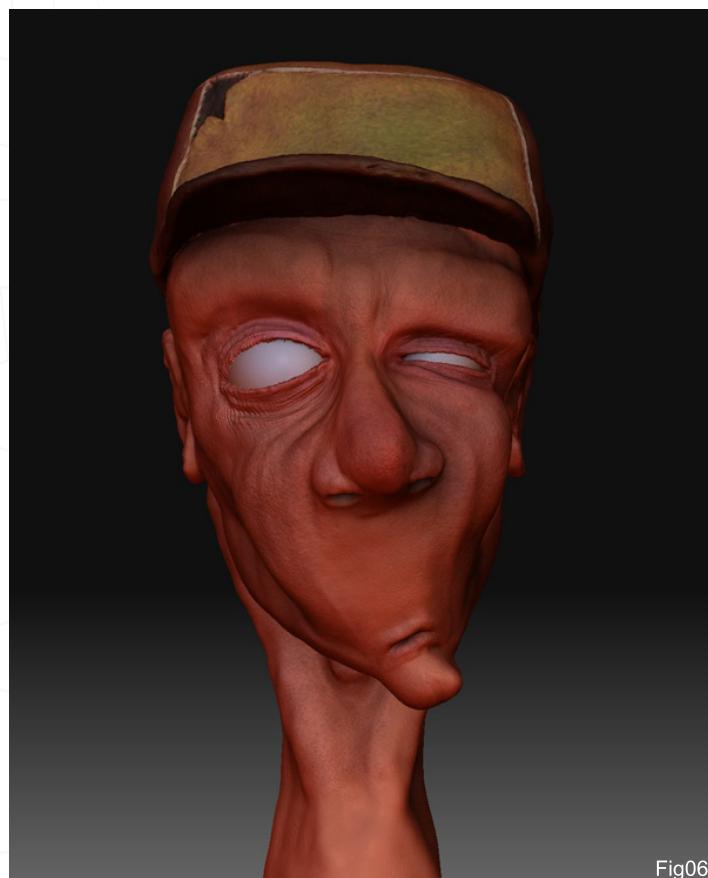
Fig06

Now the model gets exported from ZBrush and imported into 3ds Max where I will be using V-Ray for lighting and rendering. In order to export the model, I derive a diffuse and displacement map of the highest detail level and save that out. Then I decrease the subdivisions several steps and export a reasonably-dense model so that my 3D application can handle it. The textures generally get exported at 4K since I will be rendering very high resolution images. Once the model has been imported in 3ds Max, the diffuse and displacement map is re-applied, proper materials are assigned, and a good lighting setup is created. Additional minor features are also modelled at this time, such as the pupils and teeth, for instance. **Fig07** shows the character rendered with V-Ray, using the same texture as above but with proper materials, lighting and shadows.

As you can see, the difference is enormous and this is still the exact same texture as before. This is why it's important to know how to light properly.

Fig07 is what I tend to call a 'raw' render. That means that no colour correction or processing of any kind has been applied to the image – it's simply a direct output from V-Ray. As a result, no highlights are present but that's okay because these will all be rendered out in separate layers to provide as much flexibility as possible during the composite.

Next, the various additional layers are rendered. This means setting up numerous 3D files in order to output the required assets. These assets
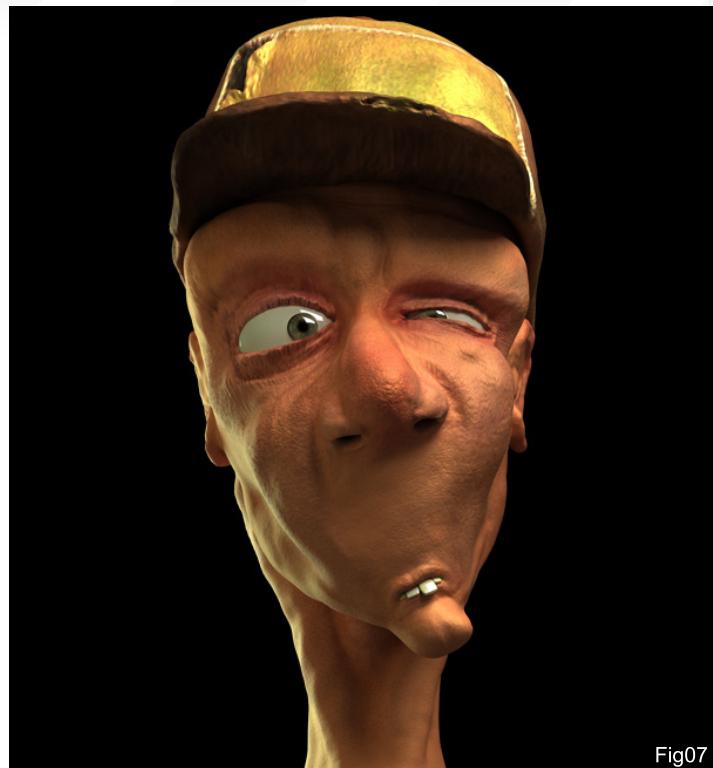
Fig07

will consist of highlights, shadows, reflections, diffuse glows, ambient occlusion, GI, and much more. **Fig08** is an example of the highlight layer. Most of these layers are rendered in greyscale since I will be colouring them in the compositing software and layering them on using various compositing modes.

Post-production

As with all of my work, 50% of the image is generated in the 3D software and the other 50% in the composite. This is the 'post-production' part of the work as you have already produced your main assets and it's the colour correction and image treatment that are important now. In order to work on the composite I will use Photoshop as my primary tool. If the render was a sequence instead of a still frame, I would most likely use After Effects.

About as much time is spent working in Photoshop as there was with ZBrush. This is because of all the missing elements that still need to be added, such as the background, clothing, decals, touch-ups, etc. Time-consuming details, such as hair, are also added at this time, and many of these elements are found in various public images scattered throughout the Internet. As a result, a great deal of researching is also required in order to gather all the necessary images you will be cutting elements from. Finding an image of a close-up of an old man with a good eyebrow to cut from may take over an hour – and this is just for one element which then needs to be properly colour-corrected and distorted to match my current palette! Working with photographs in this manner is called working with a "photo-composite".

Fig08

Image distortion is used extensively for my compositing work. It is extremely rare, for instance, that one will find a photo of a chin with whiskers that will simply 'fit' perfectly on my character's heavily-exaggerated chin. Therefore, these elements must be distorted to fit onto my character and this is generally done with Photoshop's "Liquify" tool. The overalls, for instance, were pieced together from numerous photographic elements of clothing and then distorted to fit "Billy Bob's" thin neck.

Proper colour correction also takes a considerable amount of time; finding the correct balance of red, green and blue, deciding on how much saturation and contrast to add and figuring out what kind of colour grading I intend to have at the end. The colour grading is the very last step involved in the production, but it is a crucial one. This will tie all your elements together in a unified palette. In this case, my colour grading is a subtle orange, in order to enforce the sunny afternoon setting.

At this point we have our finished image!

The steps outlined above provided a general overview of the process involved. Needless to say, there is much more work that goes into developing a character like this but cannot be fully covered in such a brief "making of".

I hope you've enjoyed this article.

Richard Rosenman

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Or contact:

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Making Of
Wood/Concrete WC

Mario Nogueira explains the process of creating this simple and modern looking bathroom.

Wood/ Concrete WC

CREATED IN:

3ds Max 9 and V-Ray for rendering; for post production work I always use Photoshop.

CONCEPT

This was a piece of work for a client, who asked me to create a simple and modern bathroom with similar lines as the exterior house (**Fig01**) – very simple and with a lot of concrete and wood. So I started by making a simple sketch on paper of the idea, and after approval from my client I got my hands working! (**Fig02**).

MODELLING

Due the fact that this was client-based work and time was limited, I used some pre-made models to compose the scene and to make it more pleasing to the eye!

Bathroom Modelling

The bathroom modelling was actually very simple: I started with a spline and from the top
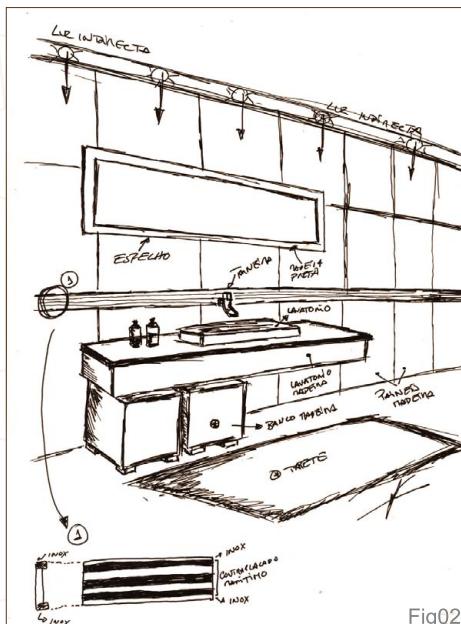
Fig01

view I started modelling the bathroom walls, then with the Extrude tool I gave the walls their volume (**Fig03**). To create the windows and doors in the walls, I converted the model to editable poly and then used the Cut tool to create them (**Fig04**). The ceiling and the ground floor are just planes and simple boxes.

After making the base model I started to add detail to the bathroom; first was the wood panels in the wall. I filled all walls with panels in wood; to make this I used the ChamferBox (In Geometry > Extended Primitives > ChamferBox) with the following values (L; W; H; F) 90cm; 90cm; 3cm; 0.50cm (**Fig05**).

Fig02
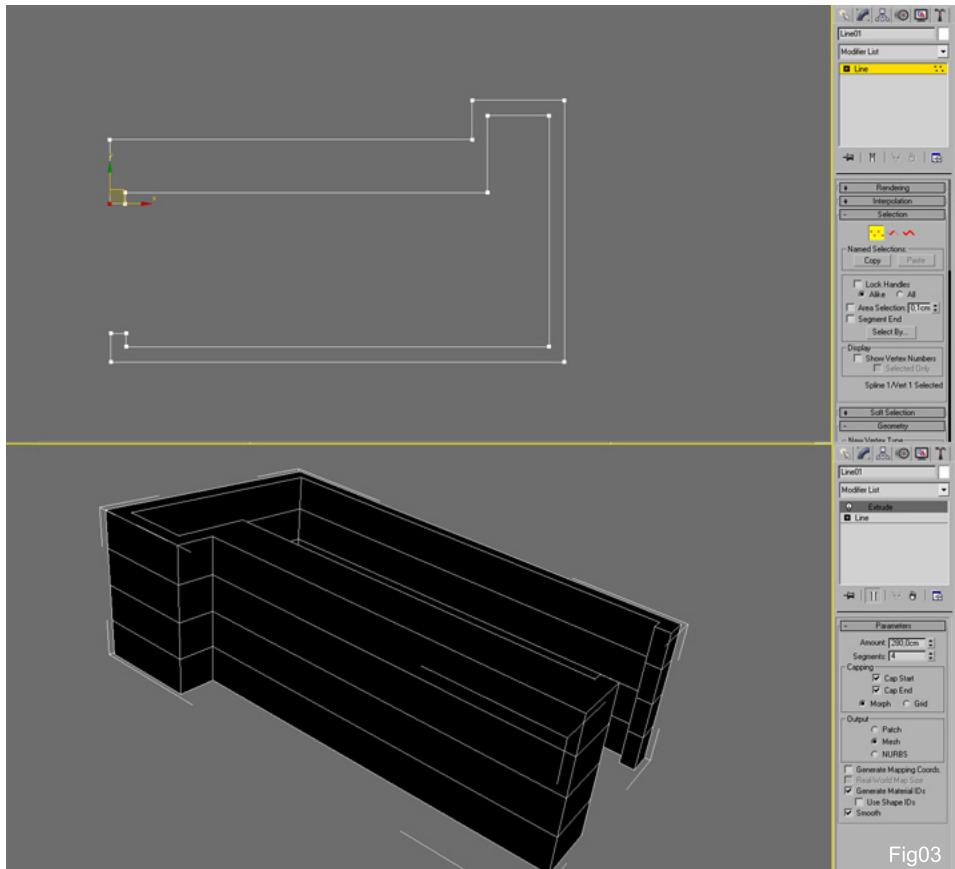
Fig03
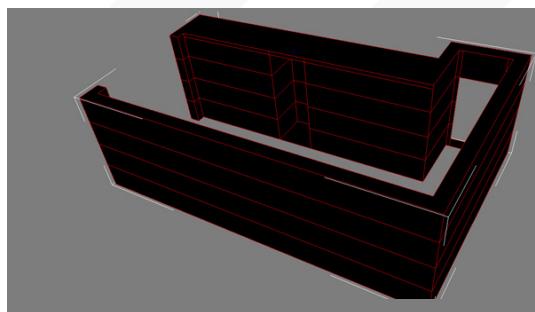
Fig04
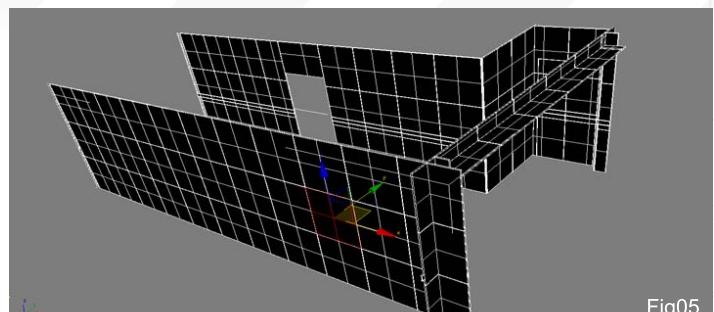
Fig05

Fig06

For the wood/metal plate around the bathroom I used a spline and then used the Extrude Modifier again to give volume (**Fig06**).

Jacuzzi Modelling

Like all previous models, this was very simple to make. I started with a plane and then used the Extrude tool to make the walls and the bottom of the jacuzzi, chamfering the corners and so on. The only problem I had was with the water. I wanted to get the ripple effect produced by running water, so I created a plane with many subdivisions and placed it under the waterfall. With the Paint Deformation tool I created some circles which gave the sensation of ripples (**Fig07**).

The Carpets

As always, I started with a spline from the top view, drawing the contour, and then added a

Fig07

V-Ray Fur modifier with the parameters which can be seen in **Fig08**.

All models were made in the same manner, using splines or poly modelling.

TEXTURING

All the textures and UV maps for the whole scene were very simple. I only used V-Ray materials and I didn't unwrap anything, so I'm only going to focus on some of them in this Making Of (**Fig09**).
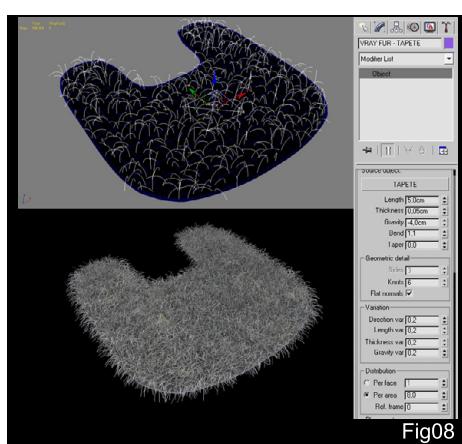
Fig08
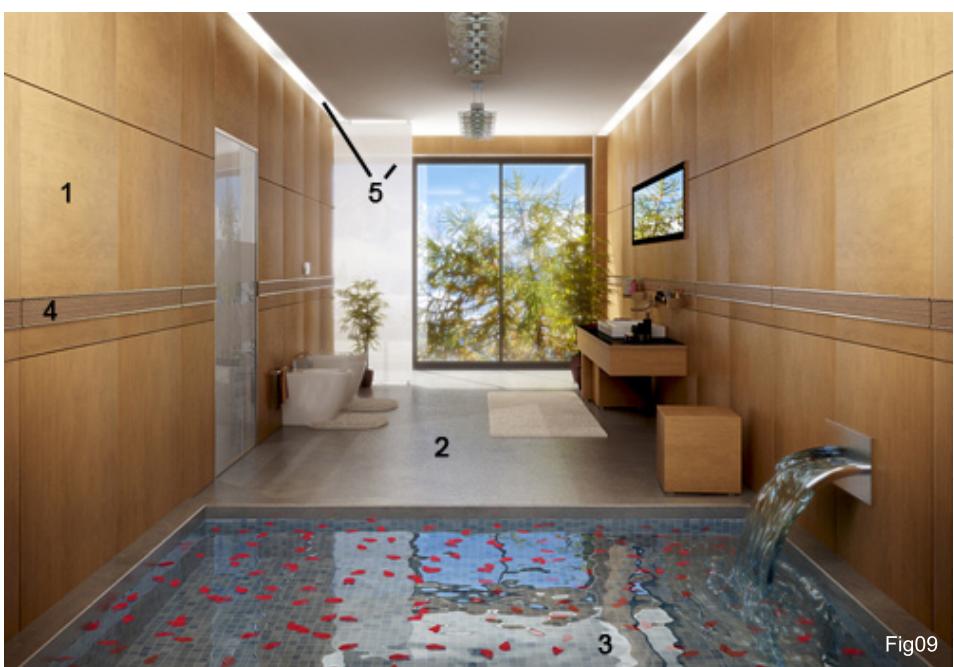
Fig09
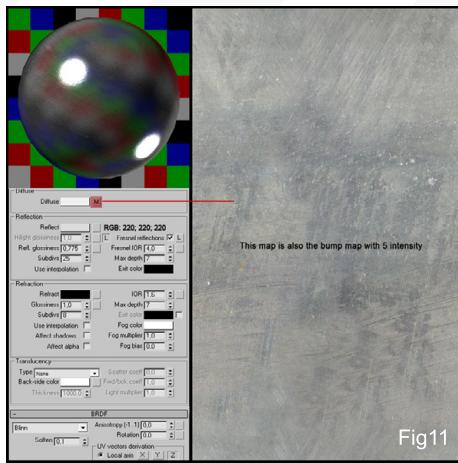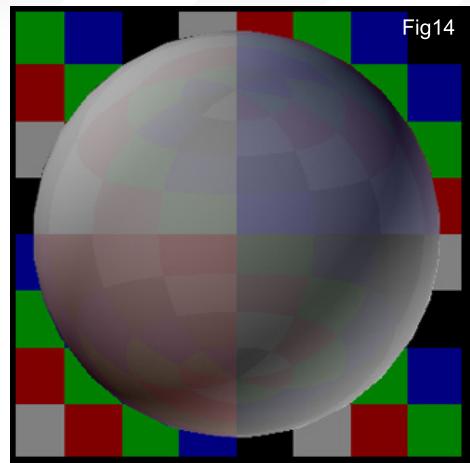
Fig10

Fig11

Fig14
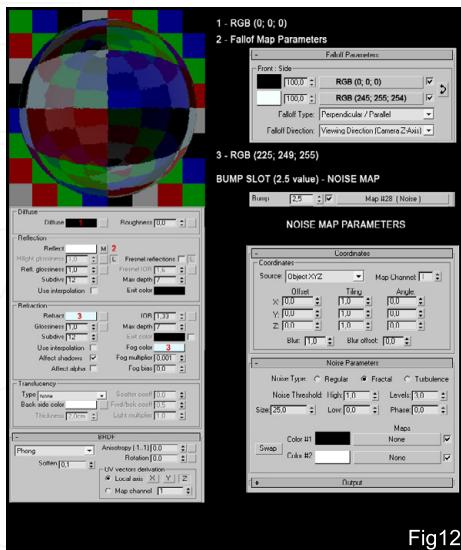
Fig12
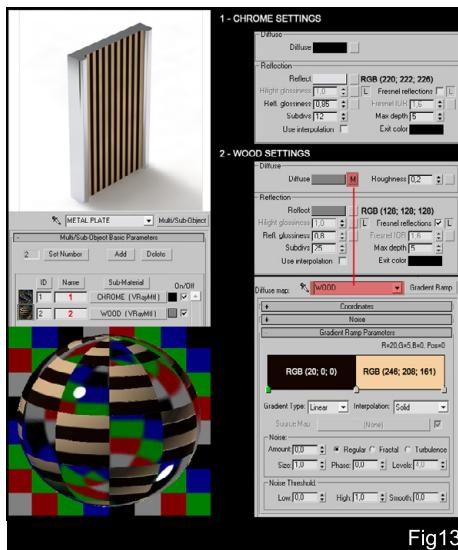
Fig13

Every map I applied had only planar, box and cylindrical UVs:

1 – Wood Panels (**Fig10**)

2 – Concrete Ground/Jacuzzi (**Fig11**)

3 – Water (**Fig12**)

4 – Metal Bar on the Wall (**Fig13**)

5 – Acid Glass (**Fig14**)

Two other materials which I don't have in the image, but are useful to mention, are the Background Image and the Glass Block:

Background Material – because I didn't have an HDRI for this image, I used a VrayLightMtl with a .JPG image applied and an Intensity of 2 in the Color slot. This gave me a soft light and reflections in the interior (**Fig15**).

Glass Block – this map comes along with 3ds Max; you can find it in the ArchMat folder in the 3ds Max root. The only change I made was to

create a Gap mask, so I could control the Gap Color between the blocks (**Fig16**).

LIGHTS

For the lighting in this scene I used a directional standard light that I'm going to call "Sun"; two big Vray lights, filling the exterior windows and doors, and 6 Omni lights in the fake ceiling to create indirect light on the walls. You can see the lighting setup in **Fig17** – top view, and in **Fig18** – front view.

Here is a little explanation about the lights I used:

The Sun: I used a standard directional light for simulating a very high sun position, with sharp shadows. This light was given a yellow colour (RGB: 255; 255; 200) in the Color slot, with a 0.85 multiplier and Vray Shadows. Also, in the directional light's parameters, I checked

Fig15

the Overshot slot and chose a Falloff big enough to cover the model. Remember: I used these values for this image in particular - not every model/image will need the same parameters. (Everything influences light – model dimensions, sun high, day time and so on!)

The Vray Lights in the Windows: I used this kind of lighting in the windows because even though I'll use GI in the render, this is not enough for lighting the interior. To create this, I set up some big Vray light planes filling all the windows in the scene. By doing this I achieved more light in the interior with soft shadows, and that's what I needed to simulate the bouncing sky/sun light in the model. In this case, the Vray lights in particular were given a blue colour (RGB 231; 238; 241) and given 3.0 Intensity. Also, in the Vray light options, I checked the Invisible option (with this checked, you will not see the light plane and the sun can pass through the Vray light plane!). When I use Vray lights in a scene I usually use a very high subdivision sampling, which in this case was 65 subdivisions. With this I removed almost all noise that the light produced in the scene. This can be a little boring sometime because the more
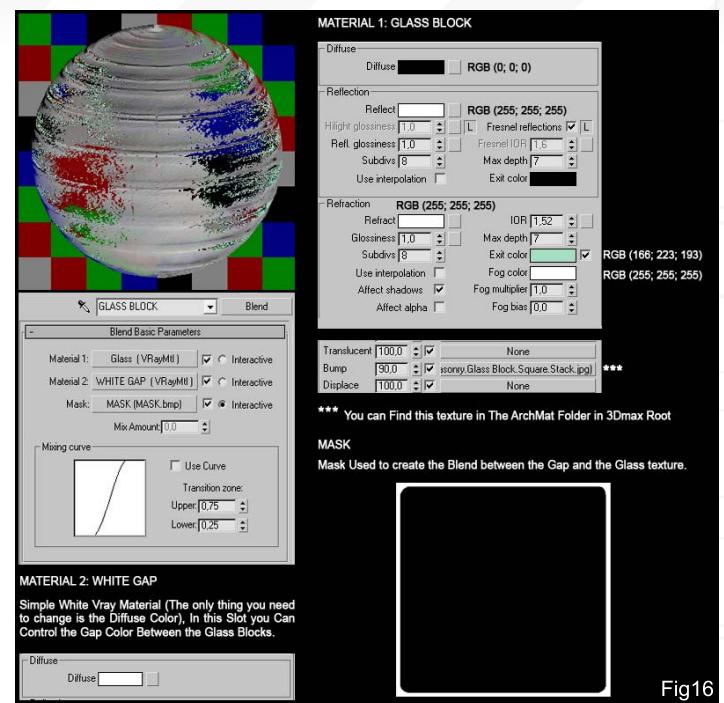
Fig16
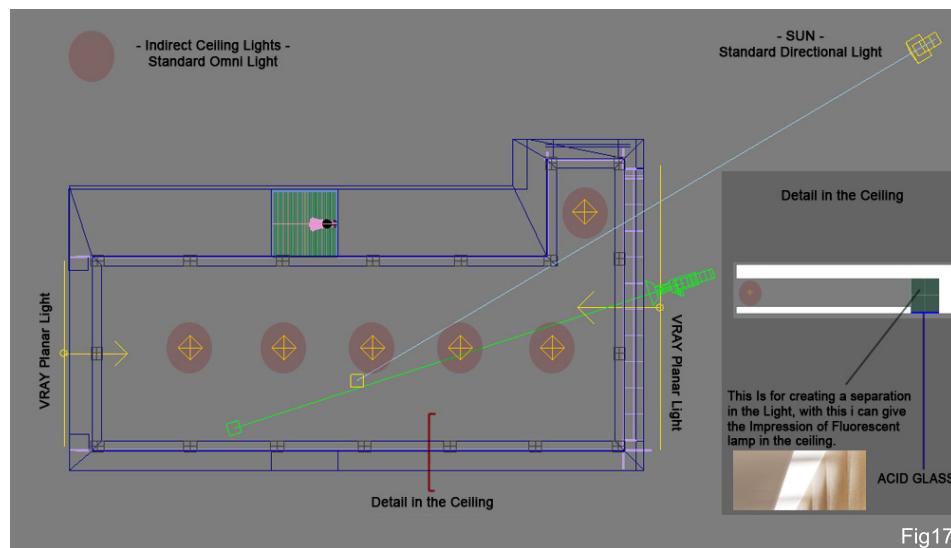
Fig17
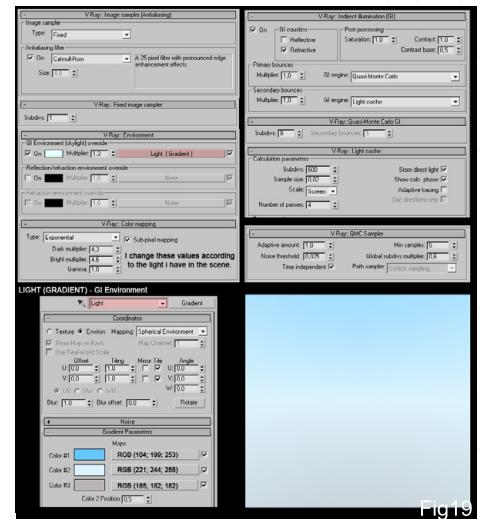
Fig18

Fig19
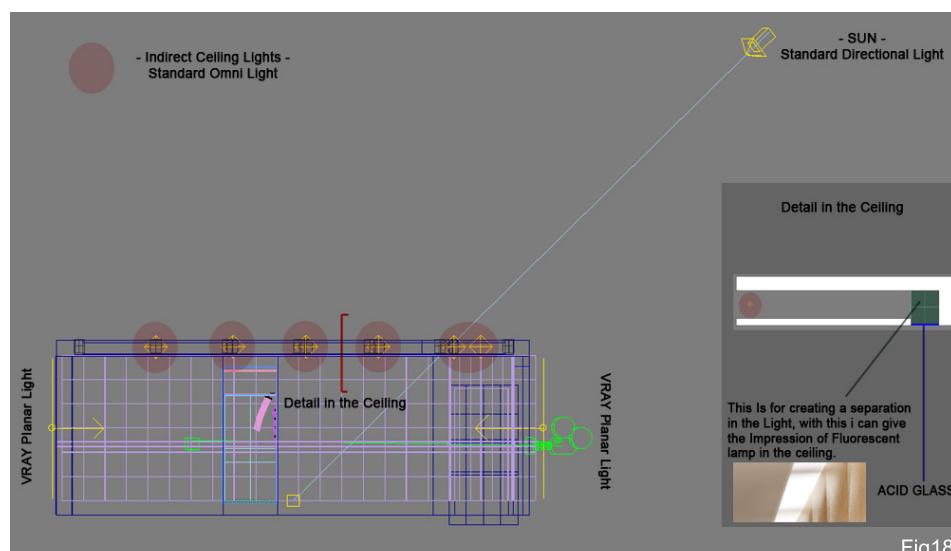
subdivisions you have, the longer your render time will be. If you don't have a fast computer then I don't recommend you to use a very high subdivision sample!

The Omni Light in the Fake Ceiling: Instead of using Vray lights in the ceiling to simulate a light in the wall, I replaced them with Omni lights. With this solution I was able to render much faster (Note: Only use Vray lights if you don't have any more light options; these lights are very good but take longer to render!). After this there was another problem. How could I block the light in some places to give the impression that I had a fluorescent light? The simple

solution was to add some boxes in the ceiling above the acid glass, each separated by one metre (**Fig17** and **Fig18** – detail in the ceiling). In this case in particular, I had 6 instanced Omni lights with a pure white colour and a 1.30 intensity multiplier. All lights had Vray shadows.

RENDERING

As I said previously, for rendering I used Vray. For me, this render engine is very useful for both interior or exterior architectural renderings. I always do the same things before rendering final images, which are as follows:

I ensure that I have a good subdivision in the Materials parameters (both in the Reflection and Refraction slots). If I have a value in the Refl. Glossiness (Reflection) or in the Glossiness (Refraction) of less than 1.0, I must increase the subdivisions to remove the noise from the material. 25-50 subdivisions is good for almost every material; 8-12 subdivisions is good for metals, like chrome, gold, stainless steel etc. Remember: if you increase the subdivision, the render time will increase, too. So try to find a balance between the materials and render time. If a material is less visible you don't need to increase the subdivisions!

I make test renders to view the models and materials in place and lit. Lighting and render tests in Vray always take longer because this is a very slow render engine; the fastest method I achieved is in the following parameters (**Fig19**).
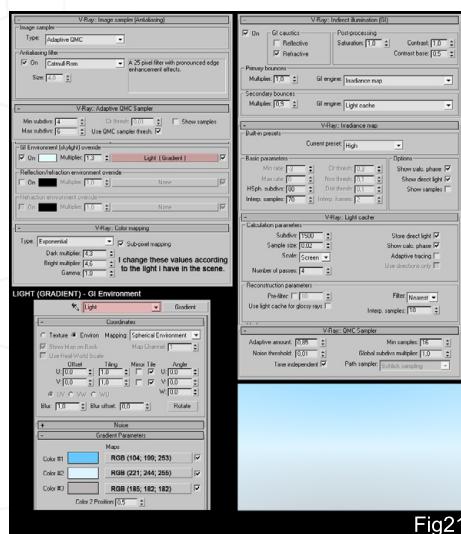
Fig20

Fig22

Fig21
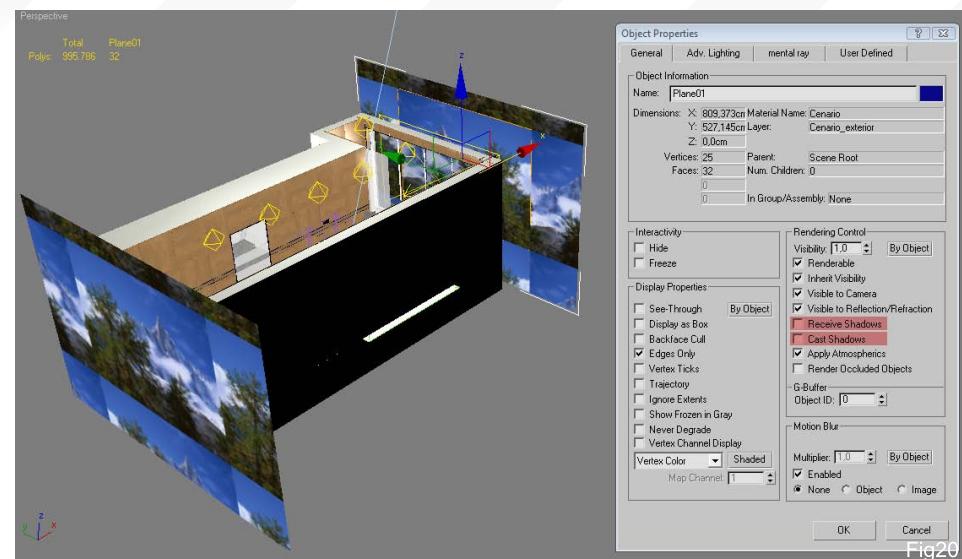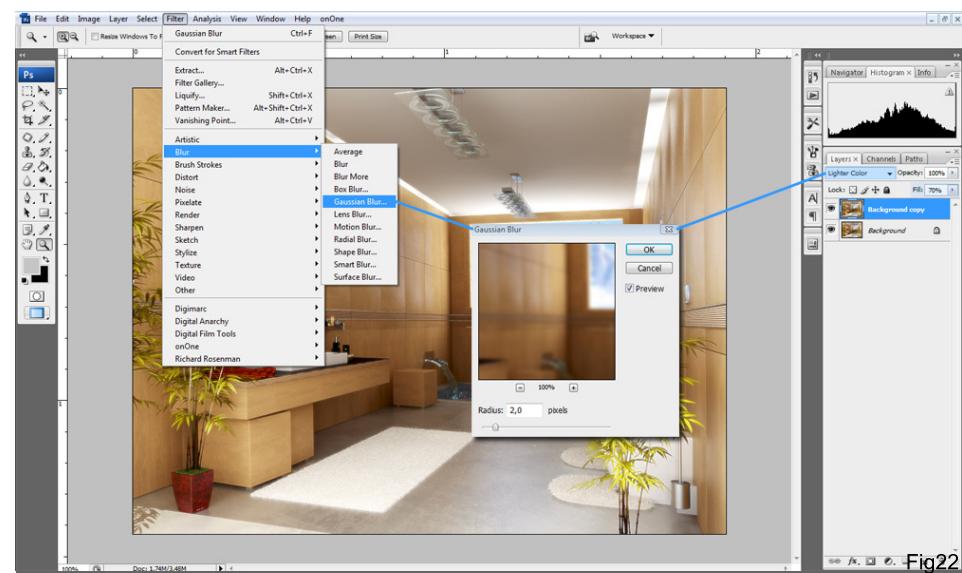
This created a very ugly and noisy render, but it was fast! You can see the models/materials in place, and whether you need more light, or not.

I ensure that nothing is blocking the lights. In this case I had the background plane; the plane was blocking the sun light because it was very close to the window (**Fig20**). For that, I went to the Object Properties and uncheck both Receive and Cast shadows. And finally, the final render…

My interiors – almost all the time – have the same final render settings (**Fig21**). After rendering I always make some colour correction in Photoshop. To achieve that 'glow' effect I duplicated the layer in Photoshop and then went to Filter > Blur > Gaussian Blur (2.0 Pixels Radius). I blended this with the original layer using Light Color mode, and changed the Fill Value until I achieved a result I was happy with (**Fig22**).

I enjoyed making this article and I must thank you all for reading it. If you have any questions, comments, criticisms or anything else that you want to share with me, please send me an email and I will try to get back to you soon as possible.

WOOD/CONCRETE WC

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"SETTING UP GOOD REFERENCES FOR MODELLING (AND FOR TEXTURING LATER ON) IS AN IMPORTANT STEP IN MAKING SURE THAT YOUR MODEL IS CORRECTLY PROPORTIONED."

Making Of

Ella

In this 'Making Of', Ziv Qual explains the key steps of the project, including modelling and rigging in general, texturing, working with complex hairs, rendering and compositing.

Ella

Created In:

3ds Max 9, Mental ray, Photoshop

Introduction

In this tutorial I will cover some of the interesting steps of this project, including modelling and rigging in general, texturing, working with complex hairs, rendering and compositing. I'll also share a few tips and tricks as we go through the working process!

Modelling and Rigging

The first step, as always, was to get a good reference. My friend Ella, who is actually a model in real life, was kind enough to pose for me so that I could get all the references I needed. Setting up good references for

modelling (and for texturing later on) is a really important step in making sure that your model is correctly proportioned. However, remember that it's impossible to take a perfect photographic reference because the camera will always have a certain amount of perspective distortion. Also, the front and side images can never align perfectly, so I did my best to set them up correctly based on elements like the eyes, nose, lips, and ears. For these reasons, these images only served as guidelines while I was modelling.

Even though this project is about a head portrait, I decided to go all the way and make a full body first to save myself some time on my next projects. I made a quick rig for the model, used Biped for bones and did a quick skinning (it's not perfect but it's good enough for initial posing; I'll probably use ZBrush to fix badly deformed areas). I went ahead and created several morph targets to help me find my final expression quickly later on. Since the eyebrows and eyelashes were modelled separately, I found it very frustrating to get them to move
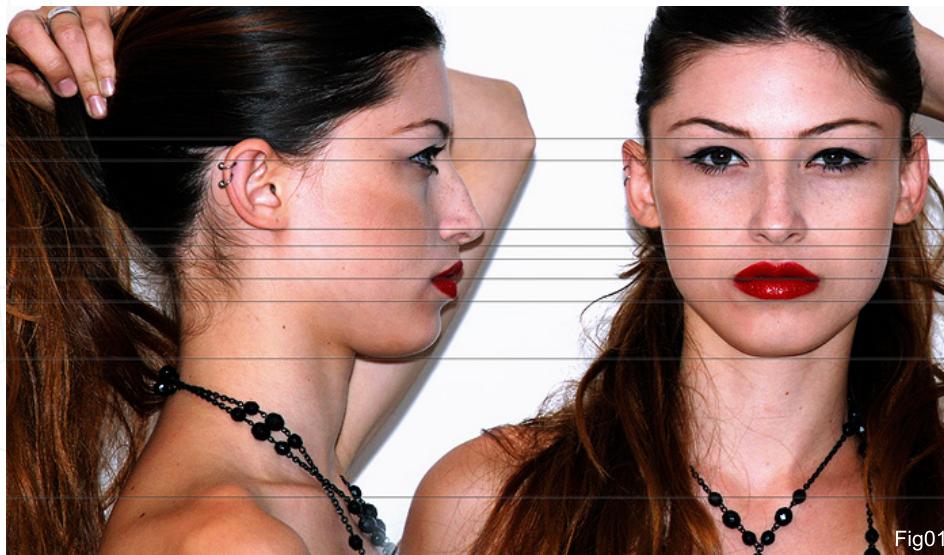
correctly with the skin. The only solution that worked well for me was to break them into small groups (**Fig01** - **Fig06**).

Fig03

Fig04

Fig05

Fig01

Fig02
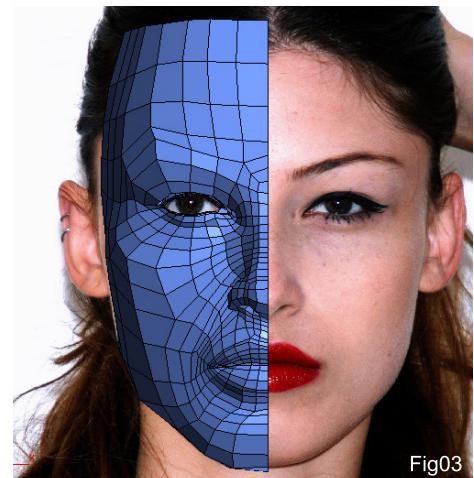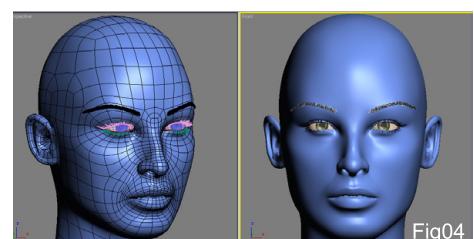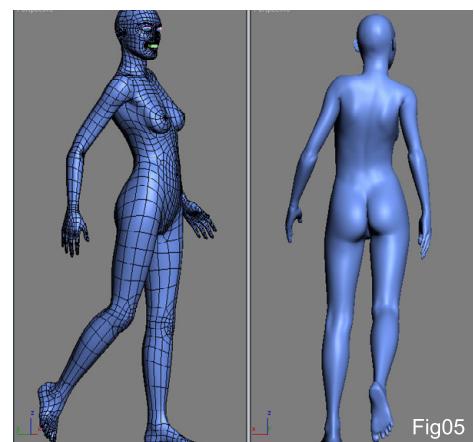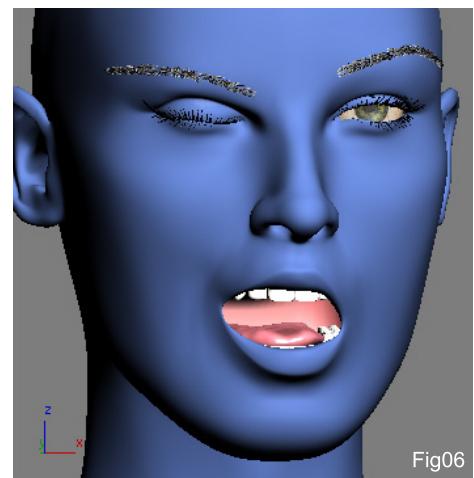
Fig06

TEXTURING

UV mapping actually came before rigging. When I reached the point where I decided the modelling was done, I unwrapped the model before breaking the symmetry so that I only worked on half the model. This way I could get pretty symmetrical mapping as well. I used Pelt to determine where the seams would go, and together, with a little bit of relaxing and hand pulling of a few UV points, the UV chunks were perfectly ready with only a few very minor

Fig12

Fig07

Fig08

Fig11

Fig09

Fig10
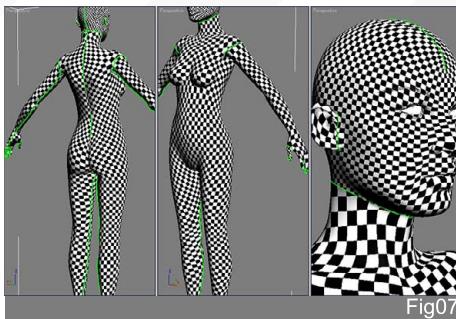
stretches. After I was satisfied with the initial mapping, I broke the symmetry and went on to arrange the UV pieces as efficiently as possible.

Since fine details on the face are more important, I decided to break the head from the body and give it much more UV space.

After making sure I'd minimised the stretches, had as few seams as possible and used up as much of the UV space as I could without having any overlaps, I decided it was time to start painting the textures. I started off by sampling many of the elements from the many reference pictures that I'd used for the modelling. I then 'flattened' the image, took out the contrast and minimised the highlights and shadows; this gave
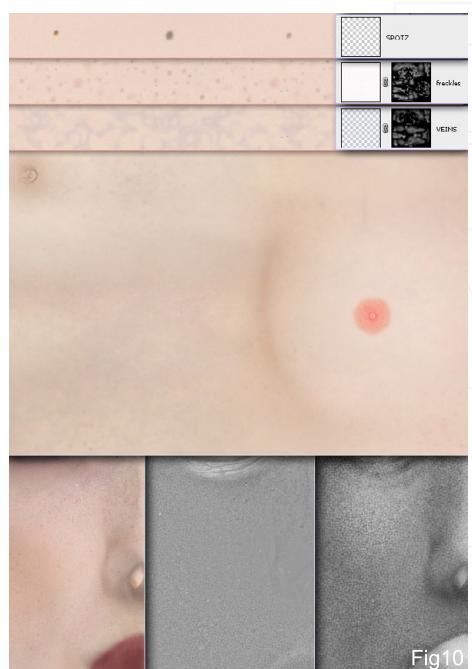
me a rough initial background for the textures. The next step was to paint the 'shades' – where the skin is generally brighter, darker, redder, etc. At this point it was time for me to start working on the finer details. A method I used a lot for this was to create many different pattern layers for freckles, spots, veins and other skin abnormalities, add a black mask to delete it, and then slowly bring it back manually with low opacity white brush strokes. To create bump and specular maps I simply de-saturated all the colour map layers and changed their value and contrast accordingly. Only minor local painting was required afterwards (**Fig07** - **Fig12**).

Hair

When I started working on the hair I approached it as I always do. The first step was to clone the polygons that would 'grow' hairs from the head to a new un-renderable mesh. I then added hairs and started combing and testing many different possibilities. Here are a few pointers for when working with Max's hair:

Variation – This is the key to making your hair look interesting. Always try to test out how much you can push parameters that will create variations in your hair, such as rand scale, hue/value variation, frizz tip, randomise etc.

Passes – It is often recommended to test how your hair looks when more than one pass is used. The higher the parameter, the softer the hair will render!
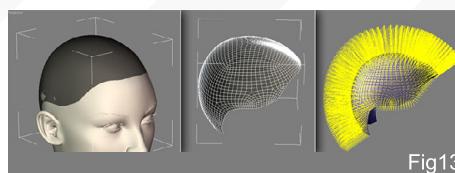
Fig13

Fig14

Fig15
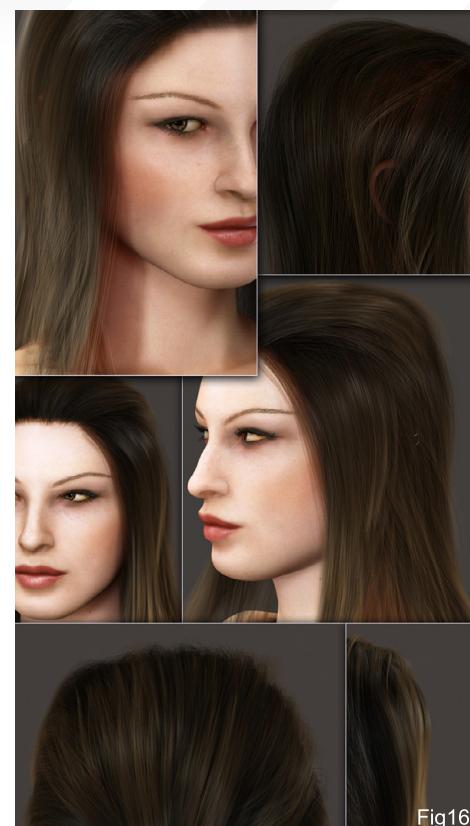
Fig16

Fig17

Fig18

Fig19

Fig20

Fig23

Fig21

Fig22
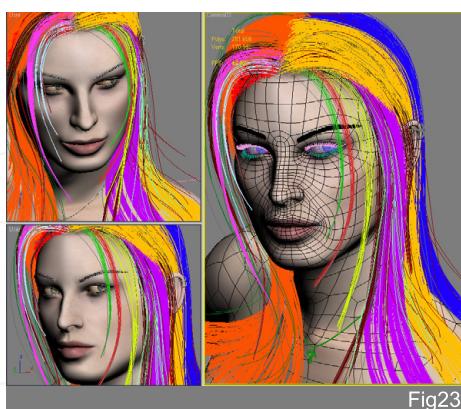
Multi-strand Parameters – Hair often tends to clamp up and this feature simulates it nicely. I usually turn it on with root slay having a larger parameter than tip slay.

Lights and Shadows – This will make all the difference about how your hair is going to render. Usually, using spotlights with shadow maps are ideal for hair. An important decision that always needs to be made when working with hair is whether you want to render the hair at buffer or MR prim mode. Buffer usually renders faster and looks softer, but MR prim works well with many different light and shadow types.

At a certain point I was struck with frustration because I realised that while this method was good, it didn't allow me the full freedom and control to design the hair as specifically as I wanted. That's when I discovered I could work with many smaller groups of hairs instead and control them by splines. I started by creating one spline that acted like the profile of the hair's shape and cloned it twice to create three different elements that would control the hair. I added hairs and pretty much used similar parameters as before. Shaping the hair to specific shapes was easy this way. I cloned the hair strands many times to smaller and larger parts, and re-adjusted every strand until I was happy with how they looked.

For extra touches, I added a few more groups for random single hairs to give it a little more of a 'naturally messy' feel (**Fig13** - **Fig23**).

SPECULAR

Fig24

FALLOFF

Fig25

HAIR

Fig26

OCCLUSION

Fig27

HAIR OCCLUSION

Fig

PEACH FUZZ HAIRS

Fig29
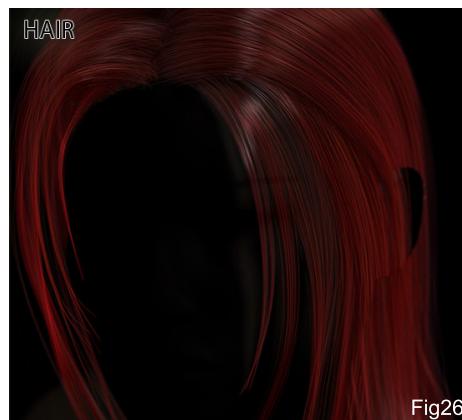
Rendering and Compositing

The image was basically done with the hit of the render button, but rendering many different passes allowed me to do the fine-tuning that was necessary for the high-res details. I used masks in Photoshop to determine where and how much each pass was used. Here are a few pointers about some of them:

Specular – I rendered this pass by turning off all the colour maps and setting the diffuse to black (yep, using the built in pass rendering doesn't seem to like working with the SSS materials). I used this pass to control the level of highlights at different parts of the image (**Fig24).**

Falloff – This was rendered the same way, only the specular was turned off and I threw a falloff map in the reflection slot. This pass served to fake the 'peach fuzz' effect at certain edges. When used correctly, it gives a slightly 'oily' feeling to the skin (**Fig25).**

Hair – I rendered out each and every piece of hair separately so that I'd have very good control over the colours of the hair in Photoshop (**Fig26**).
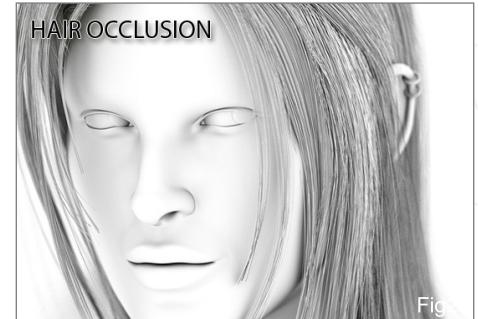
Occlusion Pass – This pass helped to add more depth to the geometry (I have written a tutorial on how I use this) (**Fig27**).

Hair Occlusion – The same as above applied here. In order for the hair to render out correctly in the occlusion pass, you need to select your hair under the 'MR parameters', turn on 'apply mr shader' and place your occlusion material there (you need to be in MR prim mode) (**Fig28**).

'**Peach Fuzz**' – This pass was rendered out for extra skin details that mainly show in the full resolution. I used a mask to make it show up only in appropriate areas, like on the lip or the chin (**Fig29).**

And that's it! After combining all the passes together, I went through some colour correcting and some local fine-tuning and this is the result (50% resolution). I hope this has been informative and interesting for you.

Z𝚒𝚟 Q𝚞𝚊𝚕

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DIGITAL ART MASTERS

VOLUME 2

With the release of 3DTotal's new book, 'Digital Art Masters: Volume 2', we have some exclusive chapters for you...

The book is more than just an artwork book, as not only does it feature full-colour, full-page images, but each artist has described in detail the creation process behind each published artwork, in their own words, especially for this book!

This month we feature:

'Lost Trinity'
by Brian Recktenwald

The following shots of Lost Trinity book pages are featured here in full-resolution and can be read by zooming in...

LOST TRINITY
BY BRIAN RECKTENWALD

INTRODUCTION

Whilst exploring in the park one sunny afternoon as a child I discovered the dying shimmer of a rusty, tin toy hidden in the grass and I was totally taken aback by the simplistic, elemental beauty amidst nature and man-made objects. Ever since then my personal artwork has been inspired by this dichotomy. My latest piece, *Lost Trinity*, is basically a reproduction of that childhood scene, but on a much larger stage.

While brainstorming for an idea to bring to life, I unearthed the concept of a cave. A cave represents all the complexity and beauty of nature but with the intimate, bounce-light atmosphere of an architectural interior. This concept also aligned with my aspiration to explore the environmental creation capabilities of ZBrush. By the end of this project I hoped to achieve a render that would stimulate feelings to explore further into the scene, whilst sparking the visual quality of a classical oil painting (Fig.01).

MODELING

The first step, before laying a pixel or polygon down, was gathering as much reference and inspiration as I could. Everything – from other artists' CG work to personal photos – was useful for this purpose. During

PHOTOGRAPHS COURTESY OF THE ARTIST

Fig.01

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this stage I also realized that a focal element was required. I knew it had to be mechanical and man-made and so I asked myself, what would be absolutely crazy, yet strangely provocative, to stumble upon whilst in a cave? The answer came in the form of the first nuclear explosive, code-named "The Gadget", which was tested at the Trinity test site, in 1945.

After gathering up all the appropriate references, I started the creation process by making a quick 3D scene in 3D Studio Max (Fig.02). By converting a sphere into an editable poly, I was able to rapidly sculpt the shape of the cave using paint deformation, and could fully carve out my composition with the bomb in place. I placed preliminary lighting to touch upon the mood and feeling of the final piece. Using the concept render as a visual guide, I then began modeling the cave using various polygonal primitives. This made things very easy to visualize and change, allowing me to focus even more on the composition. This technique also allowed me to experiment with getting the right lens and camera angle early on (Fig.03). Once my primitives were laid out, I had to decide how I was going to chunk the cave up. By building up the cave like a character, I was able to output the highest resolution textures and normal maps after sculpting in ZBrush. To hide any seams, I followed discrete crevices and roots. Using my 3D primitives like blueprints, I created proper topology on top of the geometry by using Snap to faces and splines. Once my spline cage was drawn, I converted them to editable polygons, attached the predefined chunks and merged all the vertices together. The UVs were laid out using 3D Studio Max's pelt mapping tools, giving me exactly the layout needed for their organic shape in a very short amount of time.
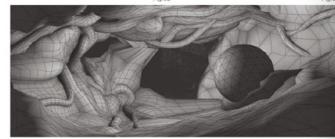
TEXTURING

The idea behind using ZBrush on the cave stemmed from wanting to create the most geometrically detailed terrain as possible, without having to rely upon procedural solutions or hand-painted displacement maps. Also, because I was using Brazil 1 for rendering, micropolygon displacements were not available whereas normal maps were. By using ZBrush I was able to extract highly accurate normal maps from my hi-resolution meshes using the free ZBrush plug-in, Zmapper. I also gained instant feedback – the ability to switch between sculpting and painting on the fly – and an overall speed boost throughout the entire creation process. The lines blurred between texturing and modeling when I used a few of the incredibly useful and high quality Total Textures images to "sculpt with my texture". This is a technique in ZBrush where you import a texture, apply it to your model at a very high subdivision, and pull a mask from your texture (Tool>Masking>Int). Then, using the deformation tools, one can pull detail similar to that of an interactive displacement map (Fig.04).

Once I had all my chunks textured and detailed in ZBrush, I brought each one back into 3D Studio Max at subdivision 3-4, replacing the previous low-poly versions. The next step was creating a generic rock/dirt material that I would instance for each chunk. I used the Brazil advanced material for each chunk consisting of a color, specular, normal, and falloff map. The falloff map was used for a slight fresnel effect to lightly simulate a thin layer of dust or dirt. The "gadget" was created with a simple sphere and then using basic polygonal modeling techniques, such as extruding, insetting, and beveling renderable splines and turbosmooth to finish it (Fig.05a–f). Once again, pelt mapping was used for each element to make the UV process quick and pain free. Shading the bomb was a little more involved than the cave and required several mixed Brazil advanced materials with glossy reflections, mostly using falloff. My goal was to create a surface that still had some shine to it, but had a layer of dust/dirt along with a substantial amount of rust (Fig.05g–p). To aid in reflections, I used an HDR panoramic which I photographed from a probe and complied using HDRshop.

LIGHTING AND RENDERING

My goal for lighting and rendering was to create a painterly image with depth and atmosphere in a sfumato flavor. I began lighting by using my concept piece as reference. Firstly, I had to place the direct light source. In this case, the sun was the direct light source, but most of the illumination from the scene has been caused by the sun's light bouncing off the sand/rock, resulting in many soft, diffuse shadows. My solution for tackling this was using area lights to fake the bounce (Fig.06a and b). Before lighting I

Fig.02

Fig.03a

Fig.03b

Fig.03c

Fig.04

Fig.05a   Fig.05b   Fig.05c

Fig.05d   Fig.05e   Fig.05f

Fig.05g   Fig.05h   Fig.05i

Fig.05j   Fig.05k   Fig.05l

Fig.05m   Fig.05n   Fig.05o

Fig.05p

decided that for the final composition I would use a primary beauty pass along with other passes, including diffuse, z-depth, light rays, ambient occlusion, vegetation, and several custom masks to isolate and color correct sections in Photoshop. By saving my renders off in a floating point format, such as open EXR, I was able to re-expose and pull details that may have been blown out or too dark. Using passes and floating point images, I spent less time re-rendering and more time tweaking my image (Fig. 07).

Conclusion

After many hours of fine-tuning and color correcting in Photoshop, I finished the render off with a slight bit of foreground Bokeh using Richard Rosenman's Depth of Field Generator Pro. This final step helped add just a touch more depth since the focal length I used was quite long. Looking back over the entire creation process, I believe I successfully learned how to harness ZBrush to create detailed and fully living environments without sacrificing complete artistic control. Since the scene is 3D, I would relish bringing it to life in a short animation or flythrough – perhaps in another project down the road. Until then, this render will continue to remind me of that little tin toy I found as a child and never to forget the beauty in the relationship between nature and machine.

Fig.06a

Fig.06b

BEAUTY

AMBIENT OCCLUSION

FOG. Z-DEPTH

VOLUMETRIC LIGHT

SPEC. REFLECTION, SHADOW

SPEC. DIFFUSE, SHADOW

BACKGROUND MATTES

COLOR MASKS

Fig.07

ARTIST PORTFOLIO

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SCI-FI 157

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Bugatti Veyron
car modelling series

3ds max

The series will cover an in-depth and comprehensive guide to modelling the amazing Bugatti Veyron car, from start to finish. We will focus on the key techniques and stages involved in building the chassis, as well as details such as the windows, lights, vents, petrol caps, engine parts and so on. The series will then move on to creating the wheels, including tyres and hubcaps, before going on to building and incorporating an interior, namely the dashboard and seating. This will be followed by a section on creating and applying materials for the numerous parts of the car, such as the paint work, chrome, rubber and glass, before concluding with a tutorial devoted to setting the scene for a finished render. The final part will cover the importance of a good lighting rig and light parameters, as well as the importance of a camera and the integral part that the rendering settings play in showcasing the model for a portfolio.

This series aims to offer a comprehensive guide for creating a finished car to people who are new to this type of exercise, but is not suitable for beginners who are not familiar with using 3D software. The tutorials do not detail every single step of adding individual edge loops and vertices, but they do endeavour to outline each important stage and explain the crucial techniques necessary to following the exercise.

The schedule is as follows:

Issue 029 January 2008
Modelling the Chassis - Basics

Issue 031 March 2008
Modelling the Chassis - Details

Issue 032 April 2008
Wheels, Tyres & Rims

Issue 033 May 2008
Interior

Issue 034 June 2008
The Materials & Finishes

Issue 035 July 2008
Lighting Set up & Render

Enjoy ...

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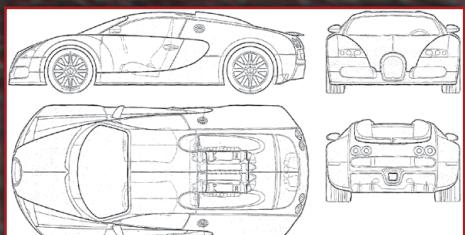
www.the-blueprints.com

BUGATTI VEYRON
PART 4 - WHEELS, TYRES & RIMS

In this part we're going to be creating the wheels of the car, starting with the rims. There are many different types of rims out there but most of them can be created in a similar fashion by using the array tool.

The rim that we're working with has 6 spokes which are connected together and another 6 which look the same but are connected in a different way. I've highlighted the connected ones in red, as you can see from the reference images (**Fig01** and **Fig02**).

Fig 01

Fig 02
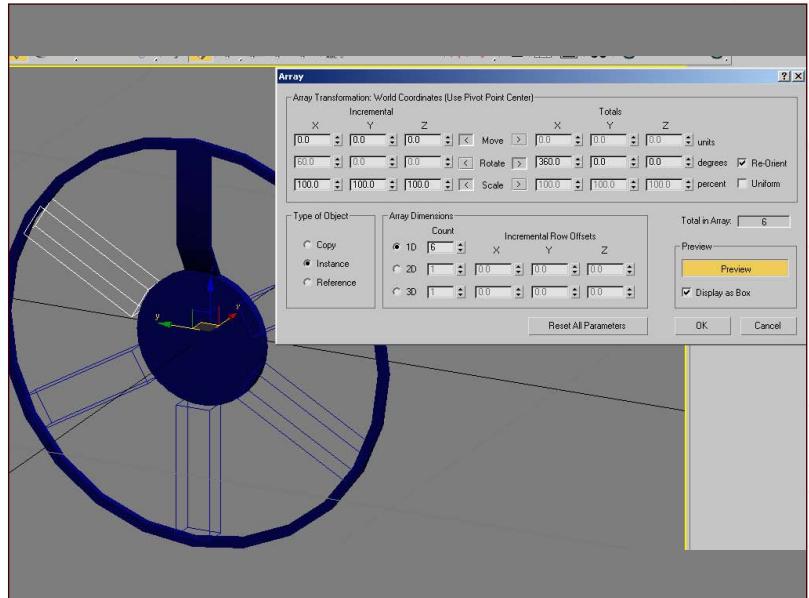
Since all 12 spokes look the same except for the area where they connect, I made one spoke and then use the 'array tool' to create an array of 6 (all instances). Then I modelled these spokes until I was satisfied, made a copy of them and finally worked on connecting all 12 spokes to the mesh (**Fig03, Fig04** and **Fig05**).

Fig 03
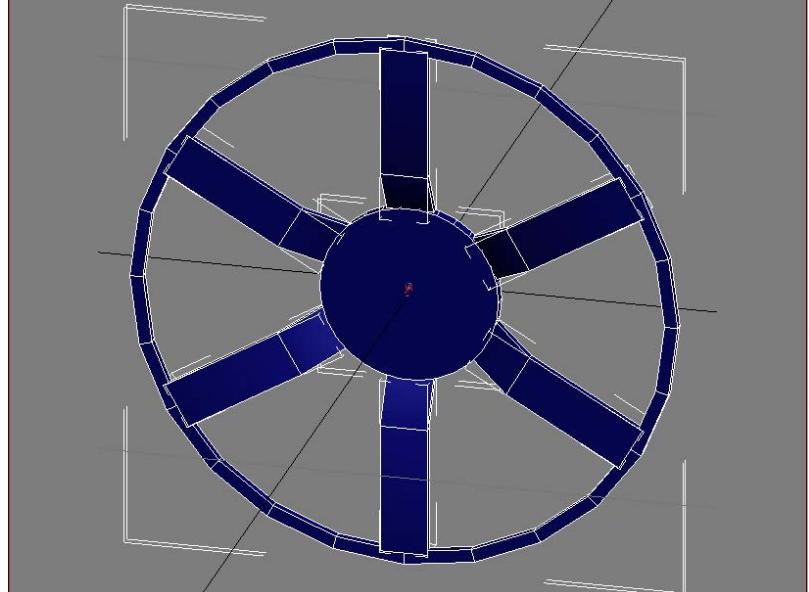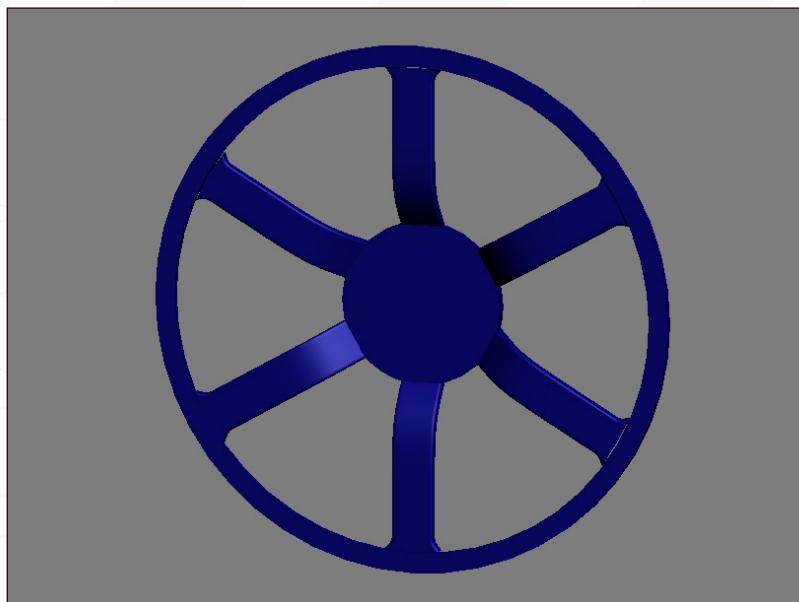
Fig 04
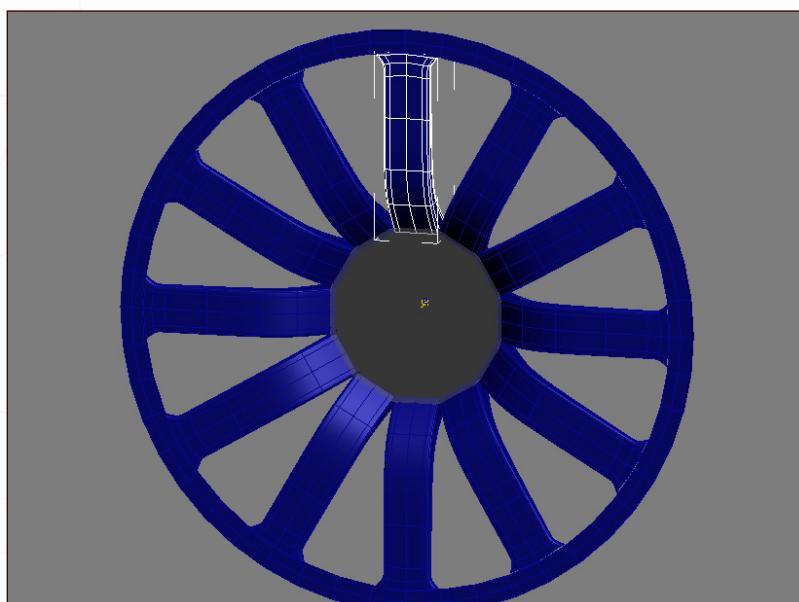
Fig 05
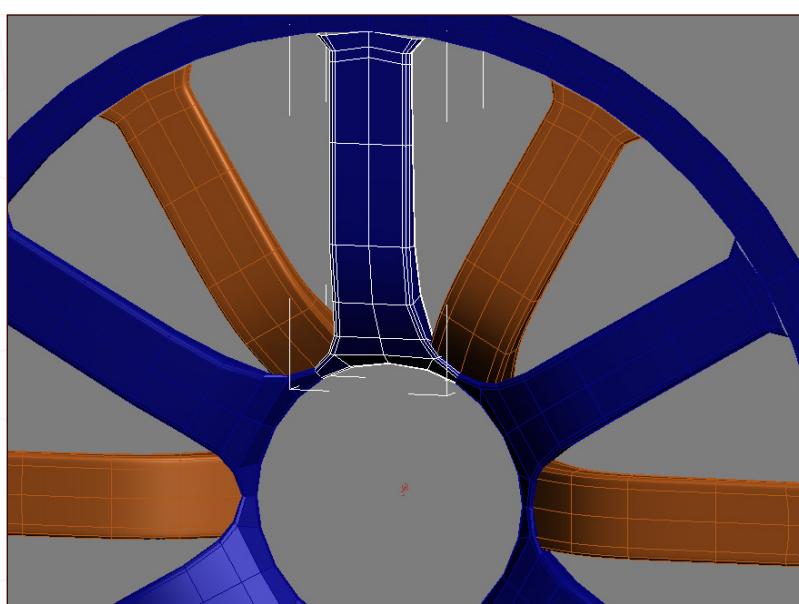
Fig 06

To make the 6 connected spokes, I just extruded the spoke I had and then moved the vertices to make it connect with the rest of the spokes array. I also used symmetry so that I only had to modify one side (**Fig 06, Fig07** and **Fig08**).

Fig 07
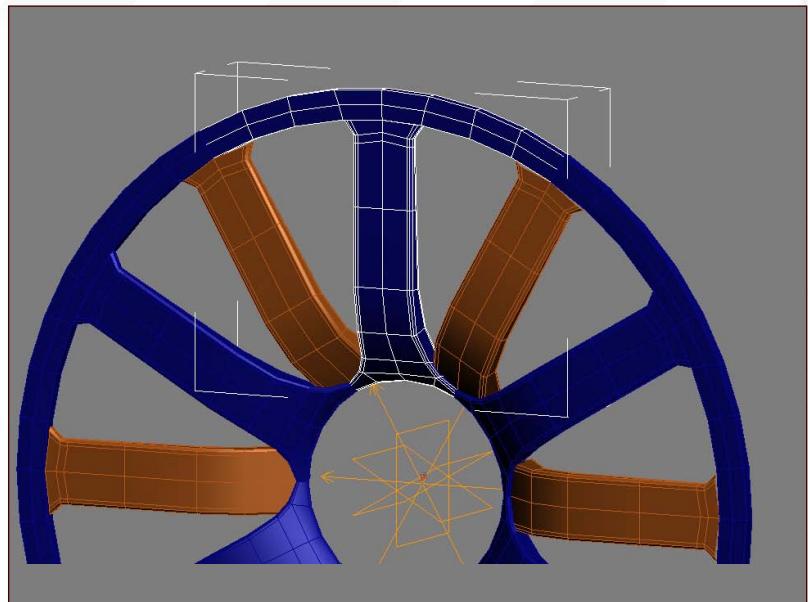
Fig 08
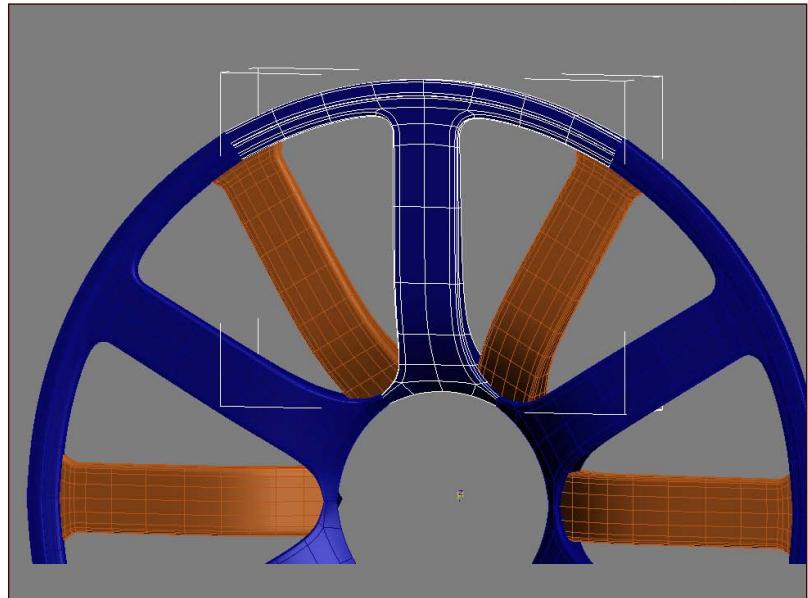
After I finished modelling the spokes, I collapsed the ones which will connect and attached them together, welding the vertices where they connected (Fig09).

This method works fine for most rims. Just create an array using symmetry to make things quicker and once you've got the form and all the details, you need attach them together and weld the vertices.

Fig 09

Fig 10

Fig 11

Fig 12
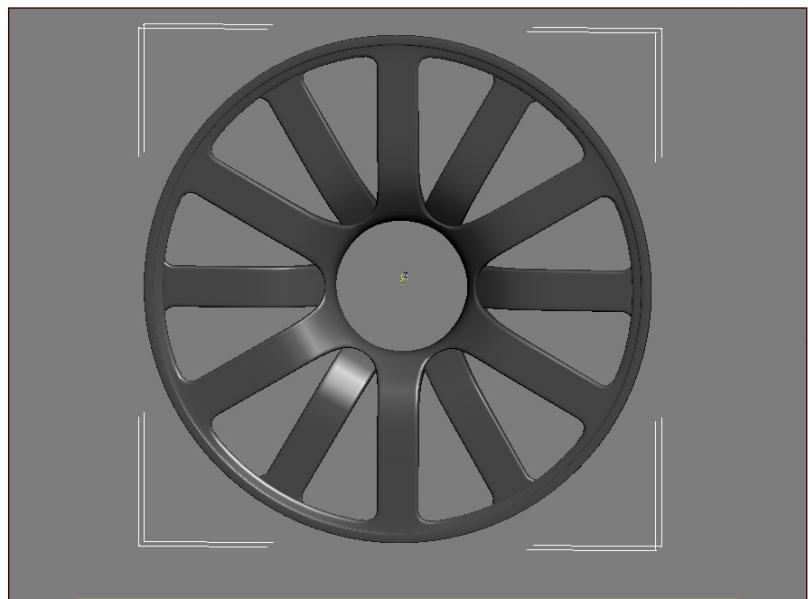
For the rim cap, I just used the fuel cap we created in the previous part. I double-checked that it was 100% circular and in the correct rotation (the fuel cap was rotated but the rim cap isn't). I didn't want to show any embarrassing mistakes in case I decided to animate this car later on! (**Fig10**).

So that's it for the rim.
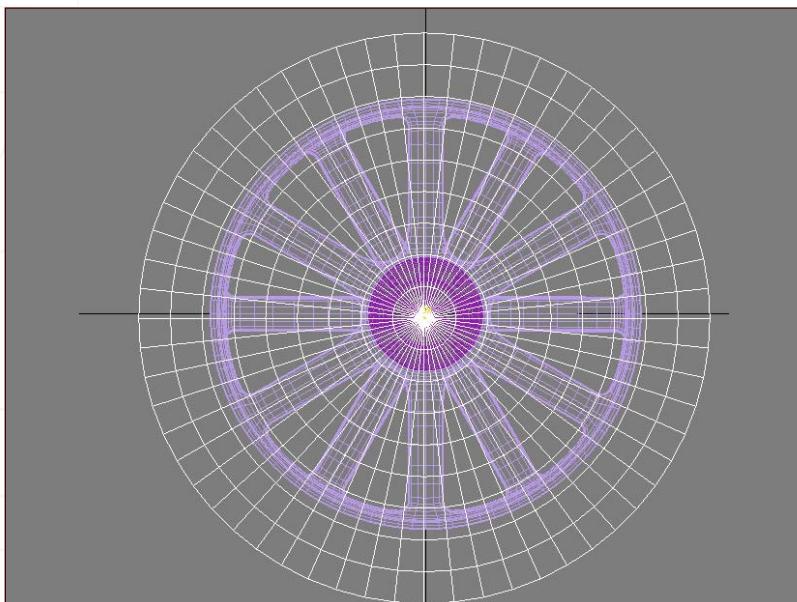
Now for the tire. There are many ways to do the tire tread and tons of different tutorials as well. One way to do it is to create a dense cylinder and modify it in editable poly; maybe twist the edge loops or extrude and then you're done. The only downside of this is that it's hard to create a mesh out of it that you can add mesh smooth to. On the other hand, it's likely that you won't need to use mesh smooth as the mesh already contains all the details you need. Another way to make the tread is to simple make it, copy it and then use 'path deformer' to make it circular.

The method I used was to make the tread and then use an array. The advantages of this is that you have more control and you will also be able to add mesh smooth. The downside is that you have to make sure you can easily weld all the pieces together and of course, make sure you don't change the tread's exact, circular form. Since some tire treads are really weird looking! It's good to know how to make them in different ways so that you can pick whatever you feel is quicker.
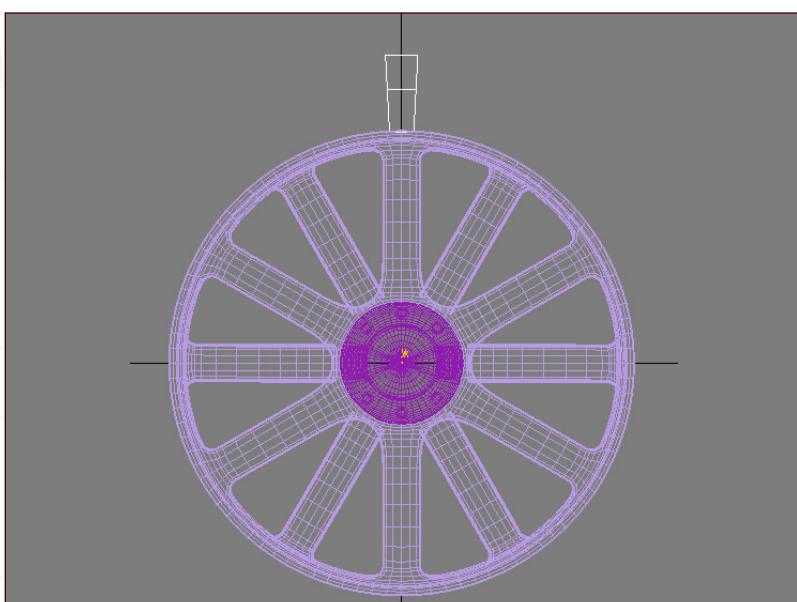
Because we have about 60 treads in the Bugatti wheel, I created a 60 sided cylinder, took the polygons from one side, deleted the rest and then created an array. Once again I used symmetry so that I only had to create one half and the other half was created for me.

The tire tread I created is pretty simplistic so that I could show you how it can be done, but you can easily take this basic tread and add any sort of extra details that you want to (**Fig11, Fig12, Fig13, Fig14, Fig15, Fig16, Fig17** and **Fig18**).

Fig 13

Fig 14

Fig 15

Fig 16

Fig 17

Fig 18
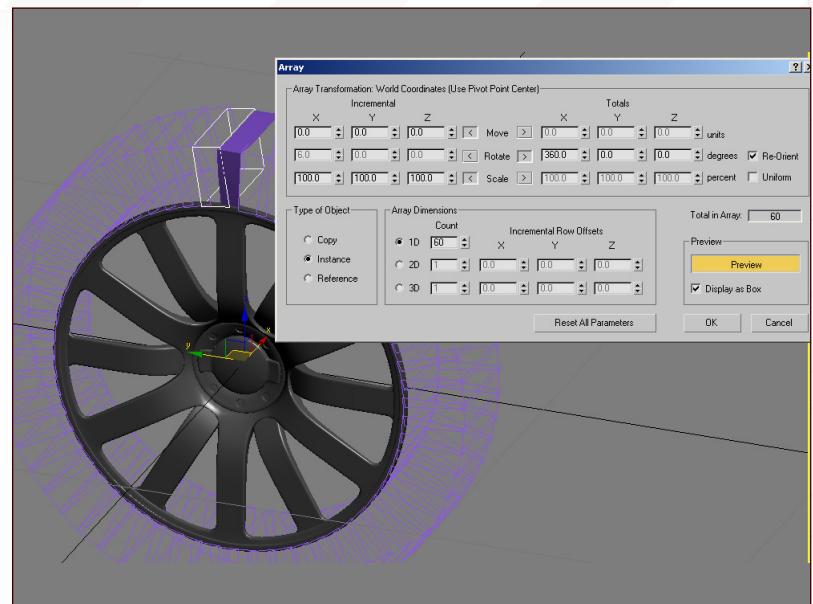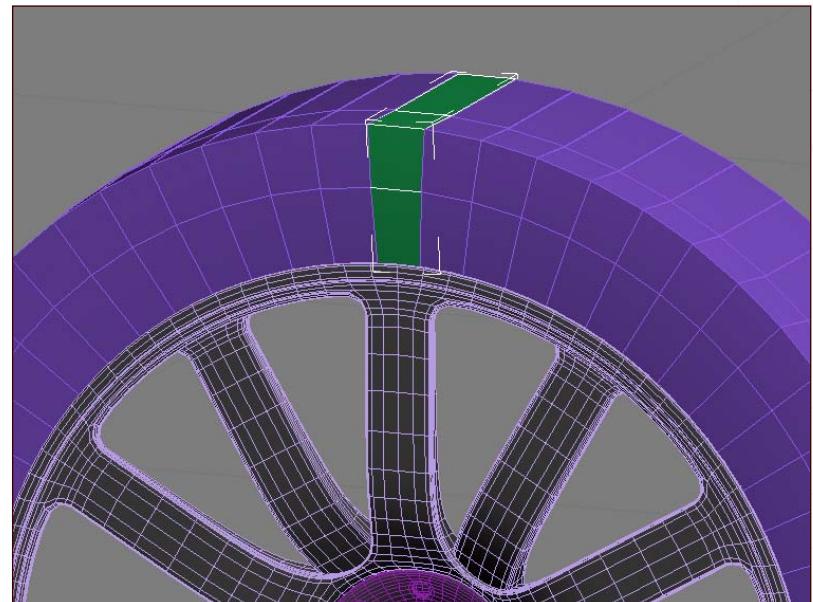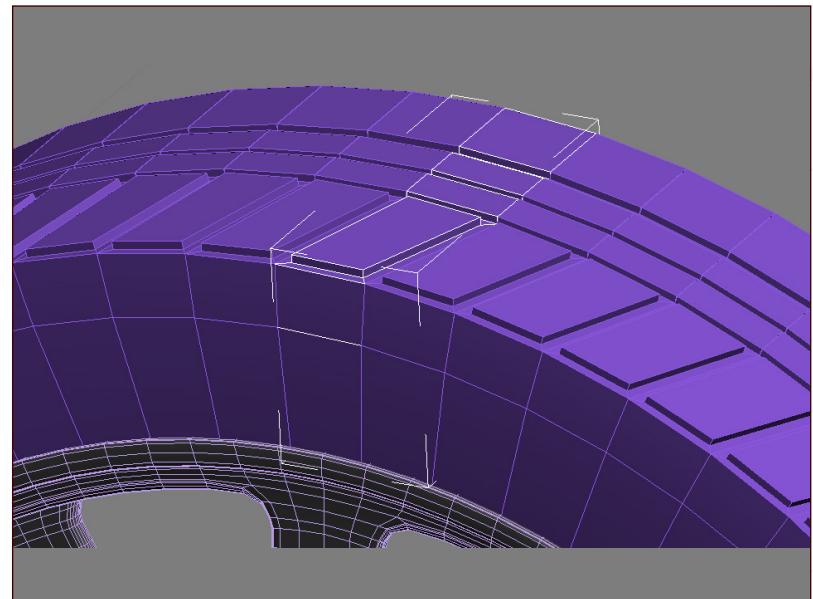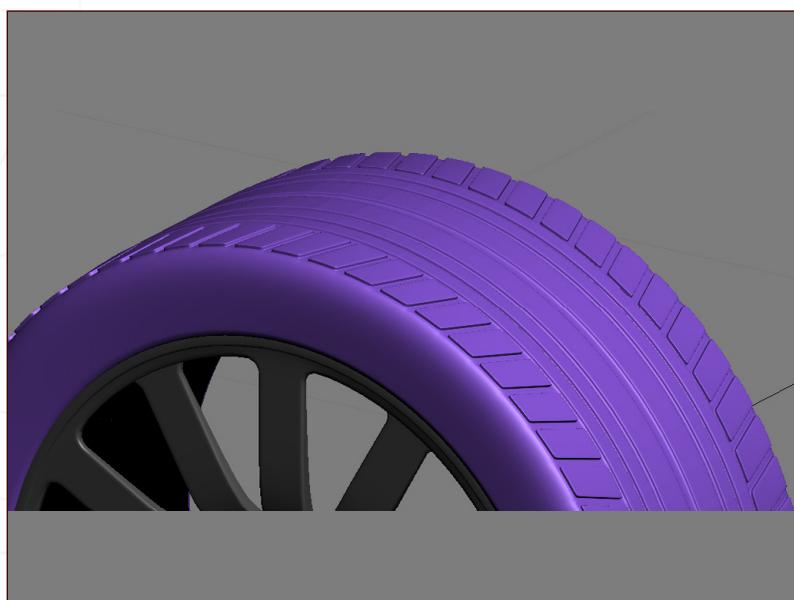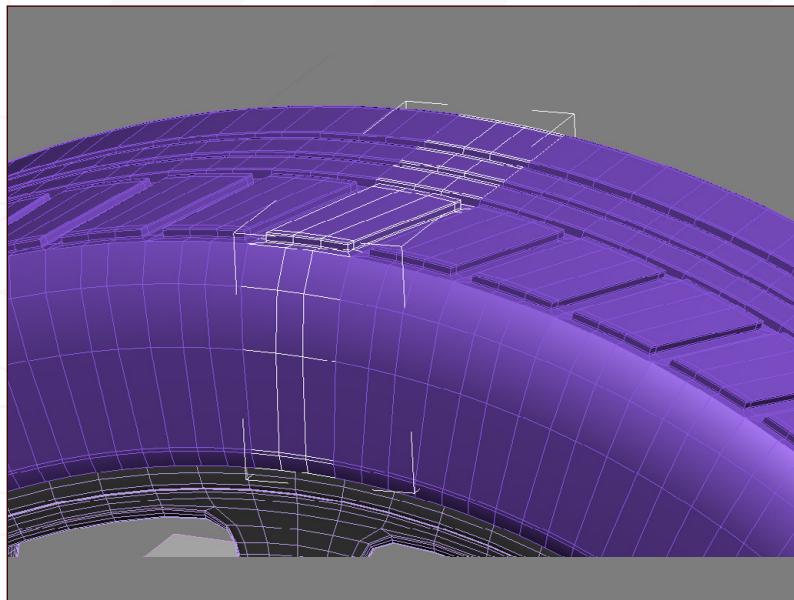
For the disc brakes I have to admit that I was a bit lazy. I used one that I'd made for another car, but it shouldn't make a big difference as it's the same principle.

I used the same method as before, created one piece then used an instanced array. Don't worry about having gaps between the pieces after you apply the array; since the copies are all instances, just modify one until all the gaps are closed, then start making the circular holes on one piece then attach everything and weld the vertices (**Fig19, Fig20, Fig21** and **Fig 22**).

Fig 19
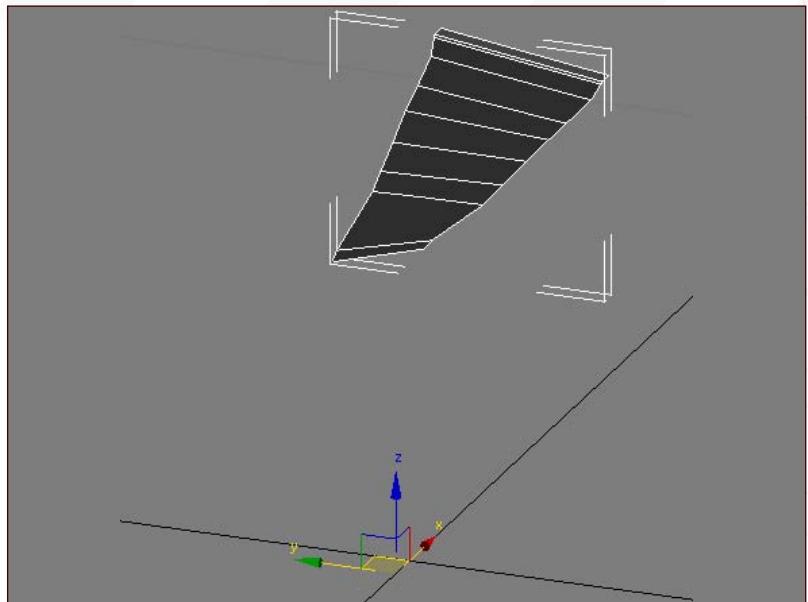
Fig 20
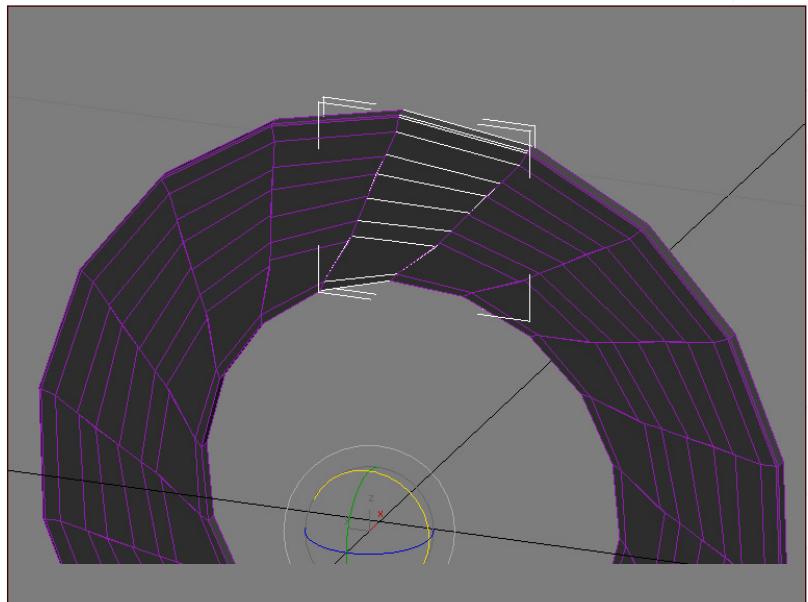
Fig 21
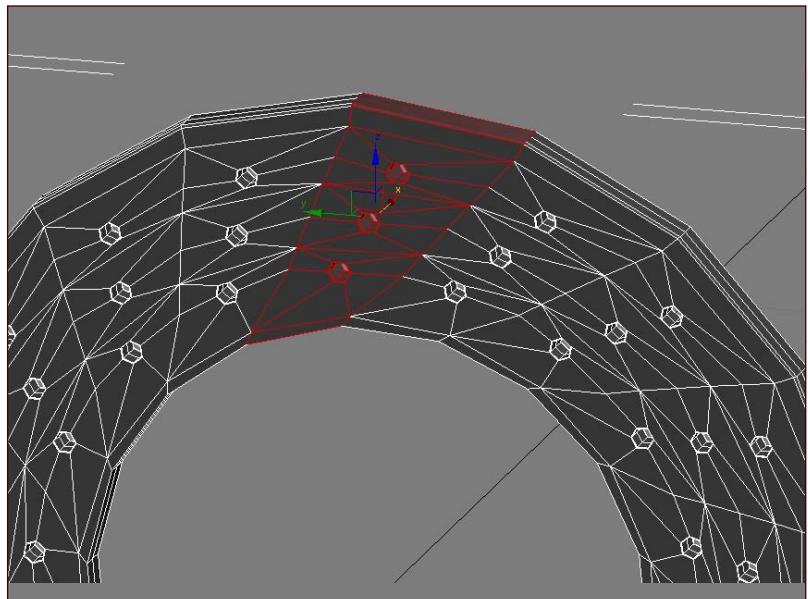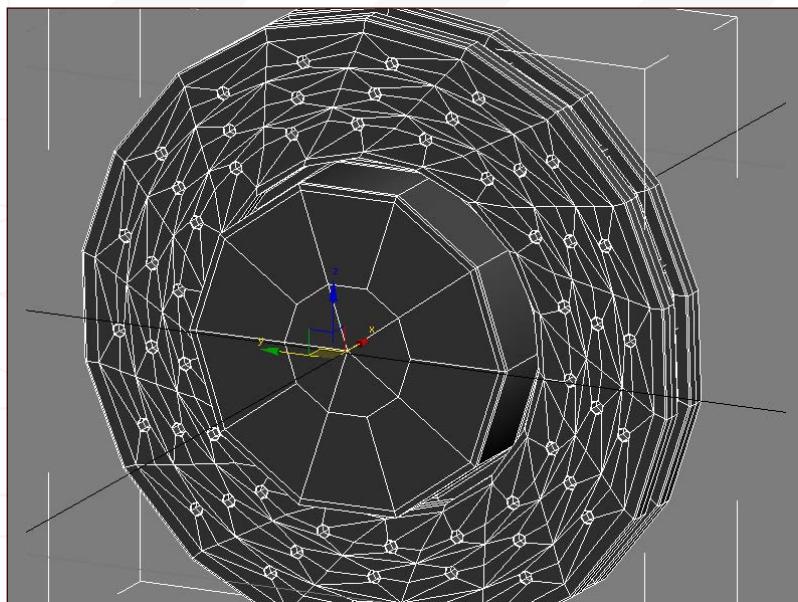
Fig 22
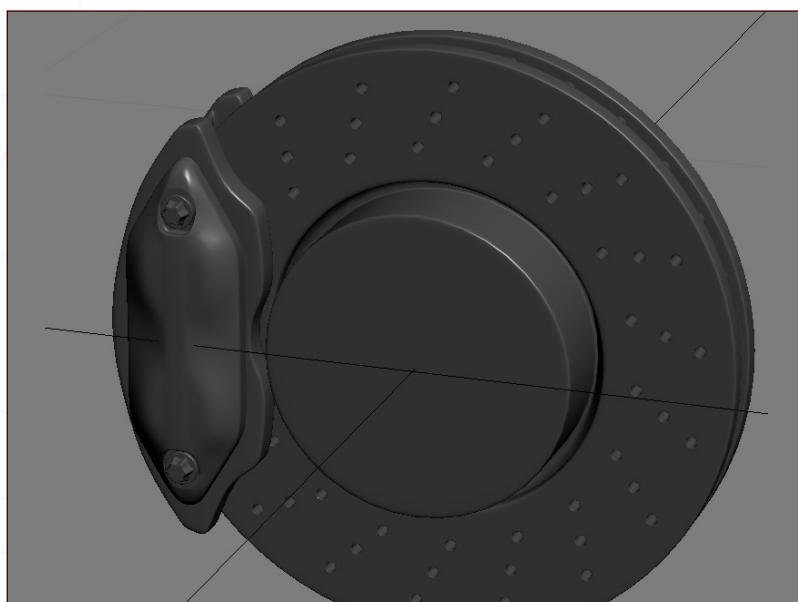
Fig 23

I've added the brake pads as well (**Fig23**).
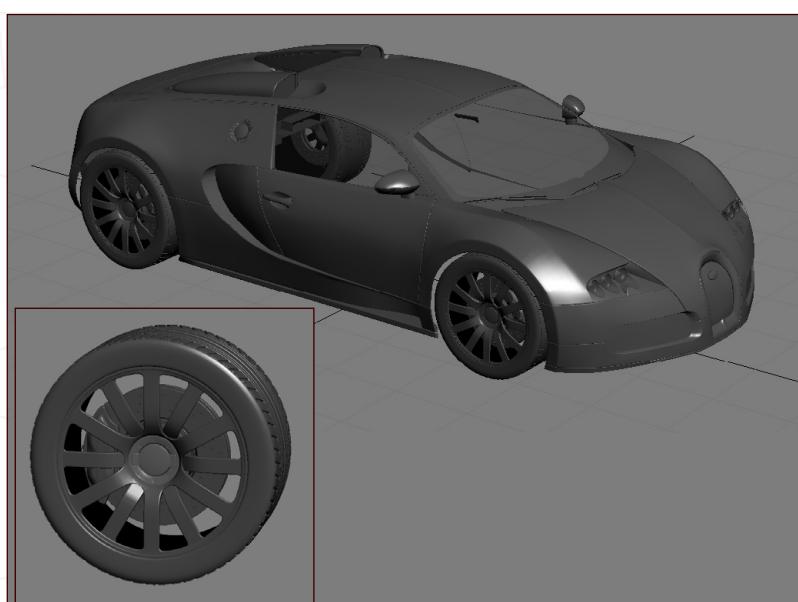
Fig 24

Well that's it for this part of the tutorial. I hope everything runs smoothly. When placing the wheels in the body of the car, don't forget to make the back wheels wider than the front ones - the same as on a real car (**Fig24**).

BUGATTI VEYRON
PART 4 - WHEELS, TYRES & RIMS

Tutorial by:
ALI ISMAIL
For more from this artist visit:

www.aliismail.com

Or contact them:

ali@aliismail.com

Eva Wild

Female Characters Creation

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- Complete step by step modelling of the Eva Wild character.
- Teaches the importance of studying human anatomy.
- Provides clear diagrams showing muscle flow and bone structure.
- 14 hours of comprehensive training.
- Suitable for artist of all levels.

Part 2 - Texturing, Mapping & Clothing:
- Complete step by step texturing process of the Eva Wild character.
- Modelling and Texturing of Eva Wild garments.
- Lighting the character.
- 4 hours and 47 mins of comprehensive training.
- Suitable for artist of all levels.

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- Complete step by step of setting up a fully animatable rig for the Eva Wild character.
- Creating a walk Cycle.
- Creating a simple face morph.
- 7 hours and 43 mins of comprehensive training.
- Suitable for artist of all levels.
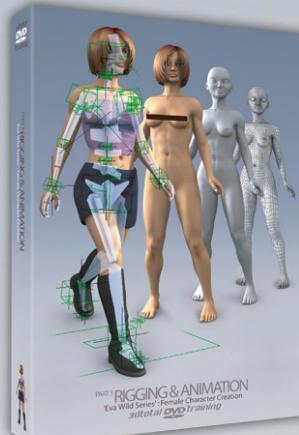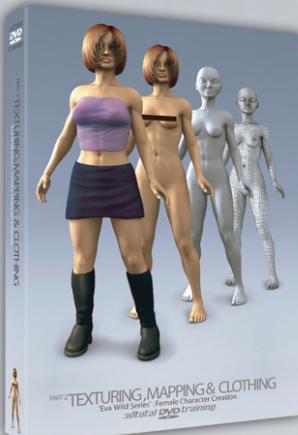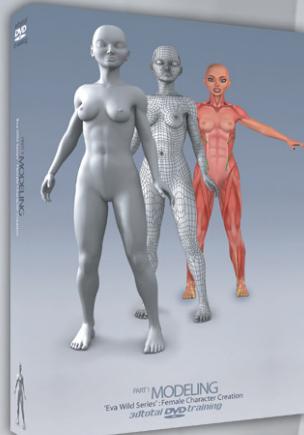
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Bugatti Veyron
car modelling series

CINEMA 4D

The series will cover an in-depth and comprehensive guide to modelling the amazing Bugatti Veyron car, from start to finish, and will focus on the key techniques and stages involved in building the chassis, as well as details such as the windows, lights, vents, petrol caps, engine parts and so on. We will then move on to creating the wheels, including tyres and hubcaps, before going on to building and incorporating an interior, namely the dashboard and seating. The series will proceed with a section on creating and applying materials for the numerous parts of the car, such as the paint work, chrome, rubber and glass, before concluding with a tutorial devoted to setting the scene for a finished render. The final part will cover the importance of a good lighting rig and light parameters, as well as the importance of a camera and the integral part that the rendering settings play in showcasing the model for a portfolio.

This series aims to show a comprehensive guide to creating a finished car for people new to this type of exercise, but is not suitable for beginners who are not familiar with using 3D software. The tutorials do not detail every single step of adding individual edge loops and vertices, but does endeavour to outline each important stage and explain the crucial techniques necessary to following the exercise.

The schedule is as follows:

Issue 029 January 2008
MODELLING THE CHASSIS - BASICS

Issue 031 March 2008
MODELLING THE CHASSIS - DETAILS

Issue 031 March 2008
LIGHTS, RADIATOR GRILL & VENTS

Issue 032 April 2008
WHEELS, TYRES & RIMS

Issue 033 May 2008
INTERIOR

Issue 034 June 2008
THE MATERIALS & FINISHES

Issue 035 July 2008
LIGHTING SET UP & RENDER

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BUGATTI VEYRON
PART 4 - WHEELS, TYRES & RIMS

In this section of the tutorial I will be covering how to model the engine, wheels rims, tyres with tread, and completing the exterior of the car.

First I begin by opening up a new document and copy pasting in the side view reference plane. Centre the rear wheel on the origin of each axis; this will help us to create the wheel rim. Now add a cylinder to the scene and roughly size it to the centre of the rim where the spokes extrude from. Now you'll need to match up the cylinders' rotational segments to the number of spokes. There are 12 spokes on the rims, but I would like more detail to help define the rims later so I've used 24 segments. Make the cylinder editable and begin to extrude out and scale inwards (**Fig01**).

Continue to extrude in and scale the polygons to form the inside of the rim. Add a tube to the scene and align it to the outer of the rim. For the rotational segments I've used 60, this is quite a lot and you could use a smaller amount, but you will need to move vertices to accommodate the spokes later on and you might encounter some problems with keeping the rims circular (**Fig02**).

Select both the cylinder and the tube and connect them to make a single polygon object. Optimise the points of the object to connect each overlapping vertices. Now loop cut the inner sections ready to bridge the spokes between the inner and outer sections (**Fig03**).

Fig 01
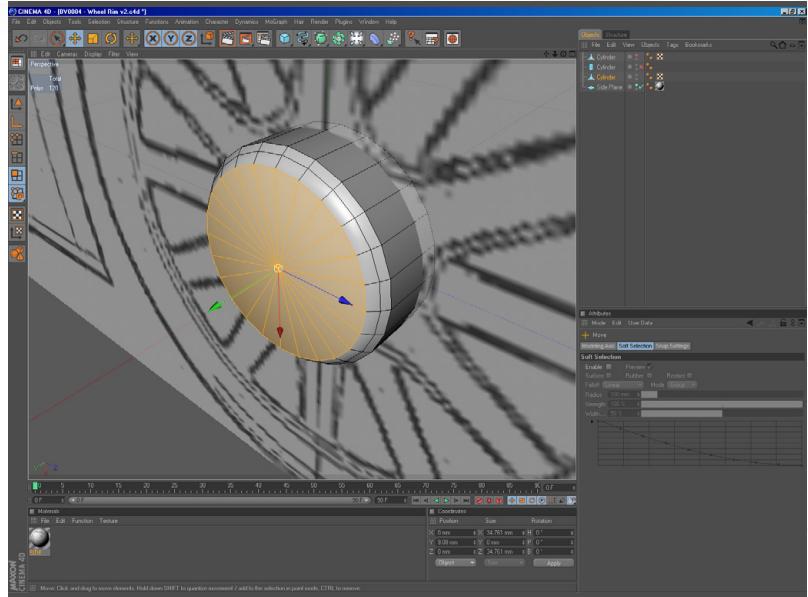
Fig 02
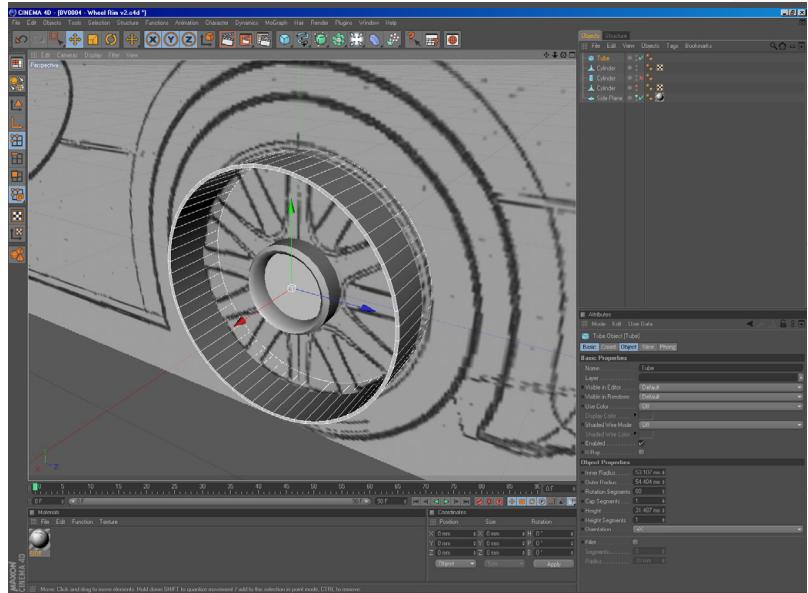
Fig 03
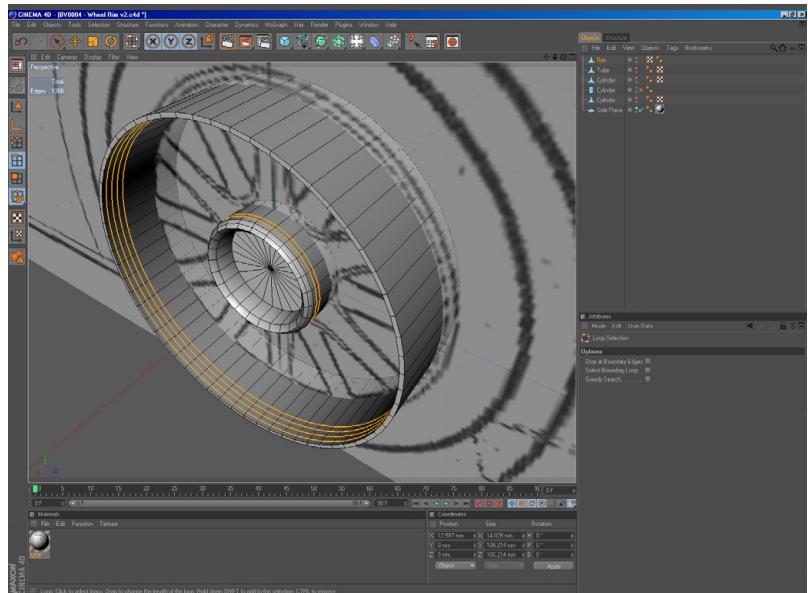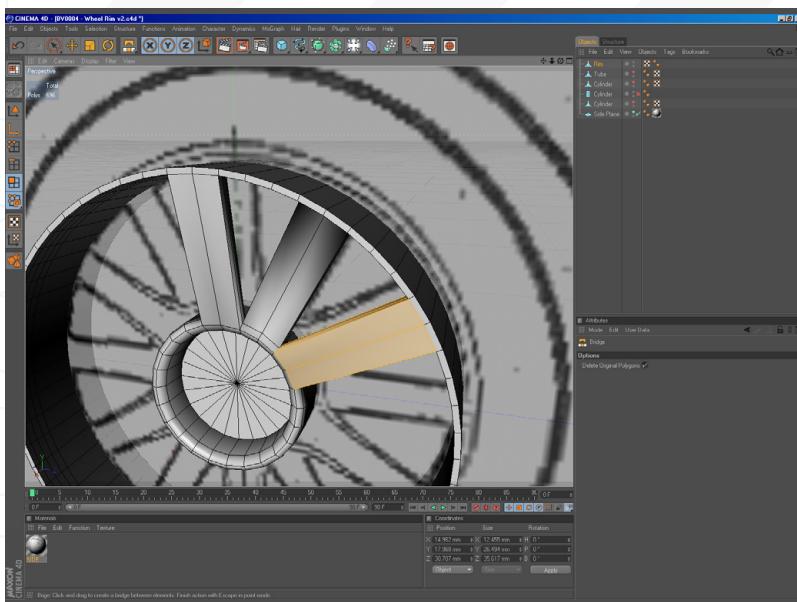
Fig 04

Bridge the spokes between the two sections using four polygons for each spoke, but remember to offset the next spoke inwards by one polygon (**Fig04**).
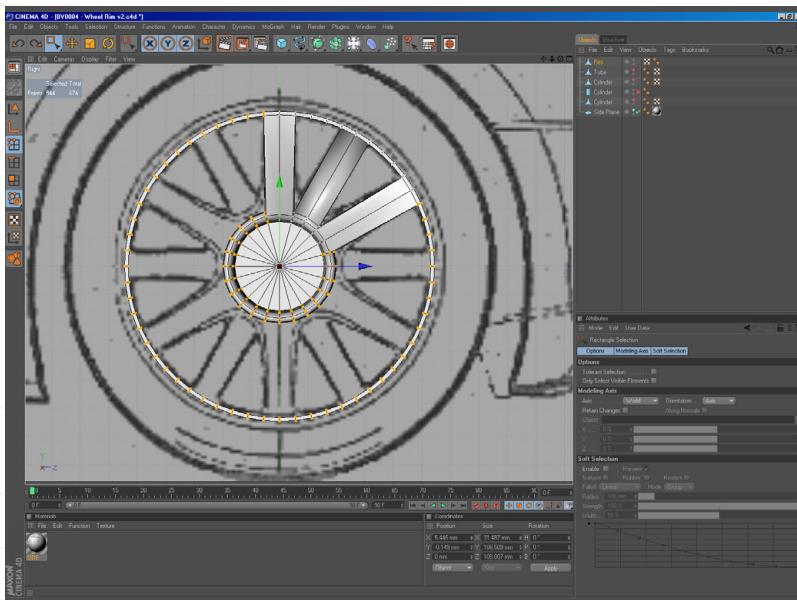
Fig 05

We only need to create 3 spokes as the rim is symmetrical, which means we can save ourselves some time and not have to create every spoke. Select all the points shown and delete them (**Fig05**).
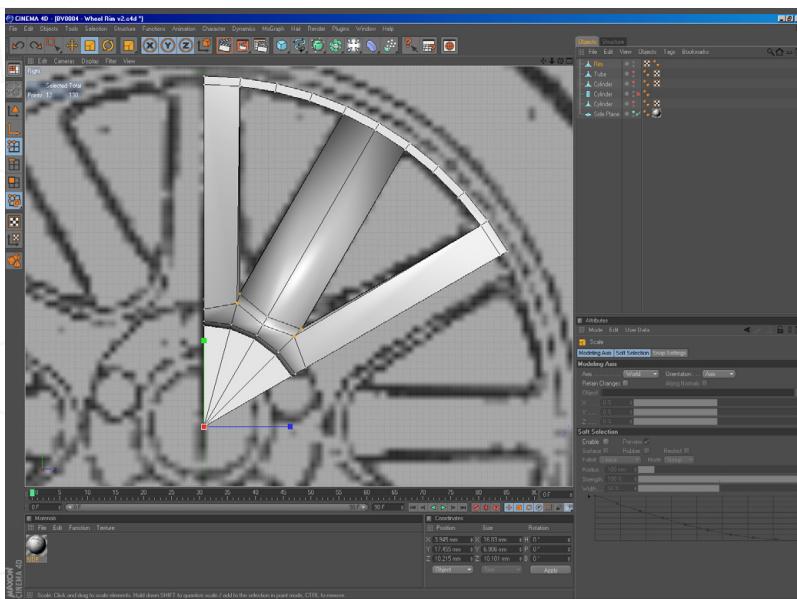
Fig 06

Now select the points shown, making sure to only select the points around the spokes and not at the rear of the rim. Use the scale tool set with a world modelling axis and scale outwards. This will give use the clean sweep ridge between the two outer spokes (**Fig06**).

Add an array object with 5 copies to the scene and drop the rim object beneath it. You'll have to rotate the rim object with the rotate tool in the object axis mode. Remember to use shift rotate to give increments of 5-10° which will make it easy to rotate it 90° back orientated to the reference plane (**Fig07**).

Fig 07
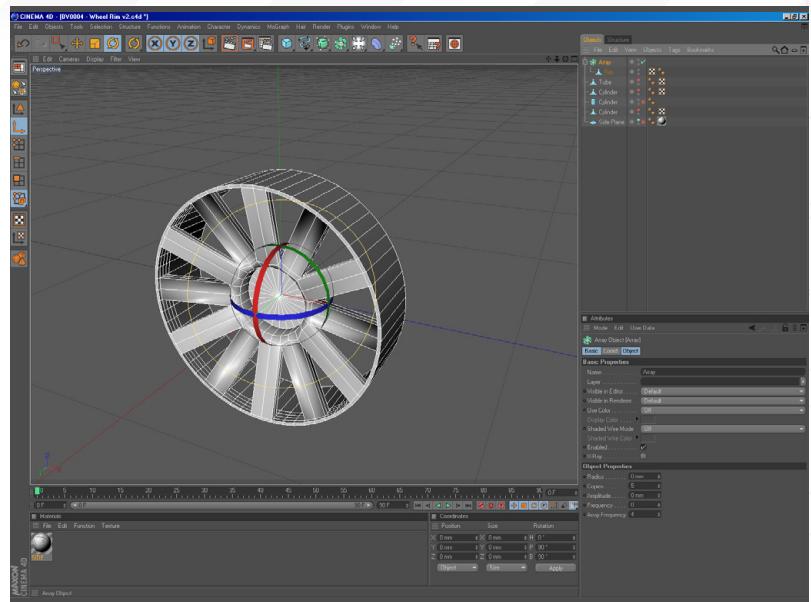
Add loop cuts to the inside of each of the spokes and along the length at 80/20% on the inside and 95/5% on the outside. Move the newly created points at 80/20% outwards to give the spokes a curved appearance. Now one final loop cut around the spokes at 50% (**Fig08**).

Fig 08
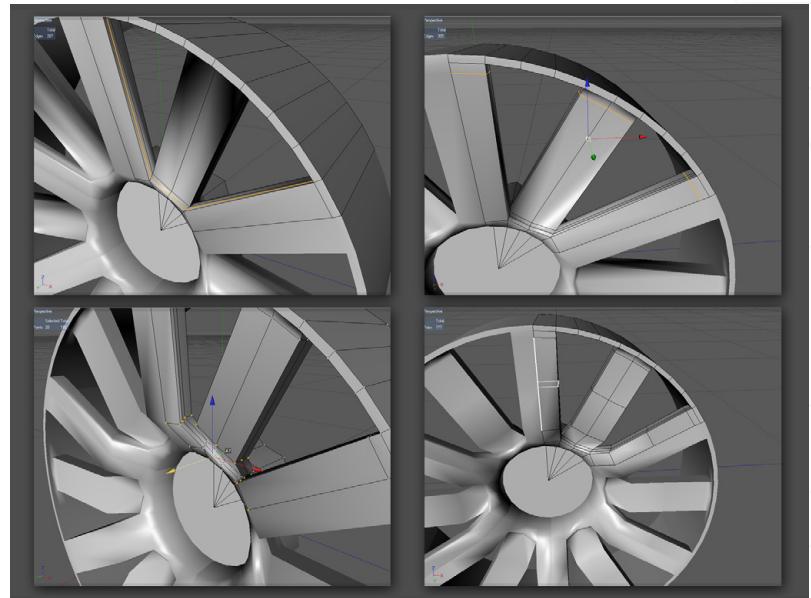
Move the points at the rear of the rim to give the spokes a thicker base at the inner section of the rim, making sure to keep the curve (**Fig09**).

Fig 09
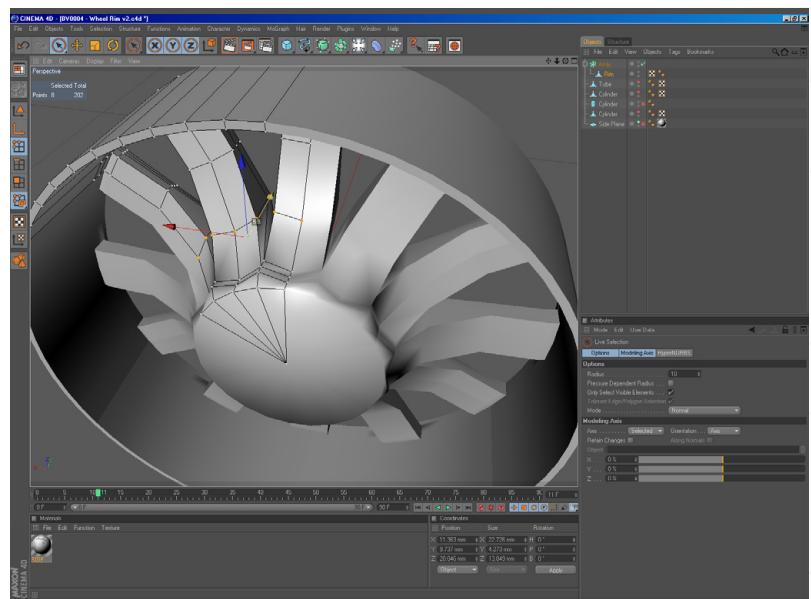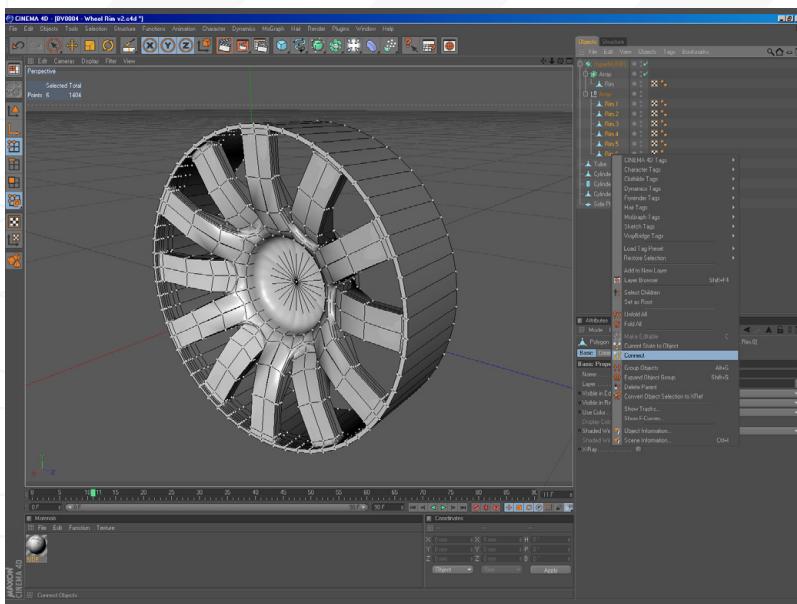
Add a hypernurbs to the top of the hierarchy and this will give you a good indication of how the rim is looking. (Remember that the hypernurbs will not be able to join each of the 5 copies, but at least we can see what is happening.) Now add loop cuts on the inner edges of the spokes to define them and check the reference images to make sure it's looking correct. Once you're happy with the rim, collapse the array object, select all the polygon objects and connect them. Optimise the points to get rid of any overlapping vertices (**Fig10**).

The inner section of the rim will need two loop cuts to define the hole. Once done, select the outer polygons of the rim and scale them out, remember to keep the size in the X axis the same. Add loop cuts to the outer of the rim to define its shape. I've copied and pasted the filler cap into the scene and scaled it to fit the inner hole to complete the rim (**Fig11**).
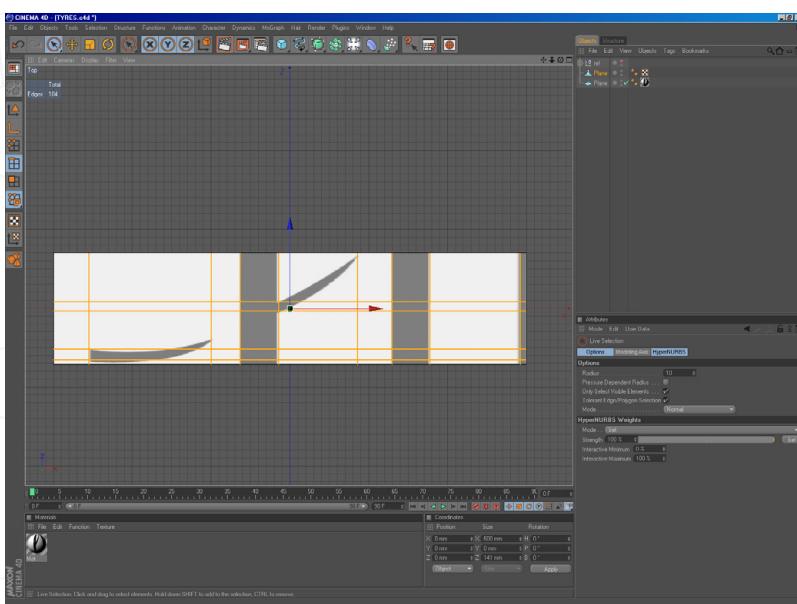
The tyres on the Bugatti are the Michelin pilot sports and you can find the tread reference image here (**TYRE TREAD**). Add a plane with 1 segment in each direction to the scene and set its dimensions to the same size as the jpeg image. Now copy the plane and apply the image to one of the planes. Now the plane without the material applied needs to be made editable; once you've done this add 11 line cuts in the top view to match the image (**Fig12**).

Add more cuts and begin to match the points to the image. We're trying to create a sectional cut through of the tyre, so now we'll need to make the tyre walls to complete the profile (**Fig13**).

Fig 13
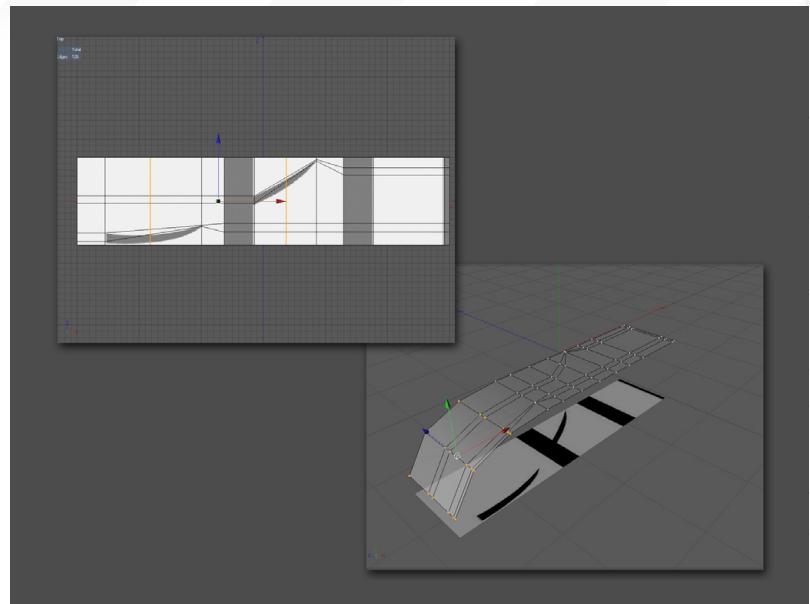
Edge extrude the walls downward and move them accordingly to create the profile. Now in the top view select all of the polygons that are white in the image and extrude up.(**Fig14**).

Fig 14
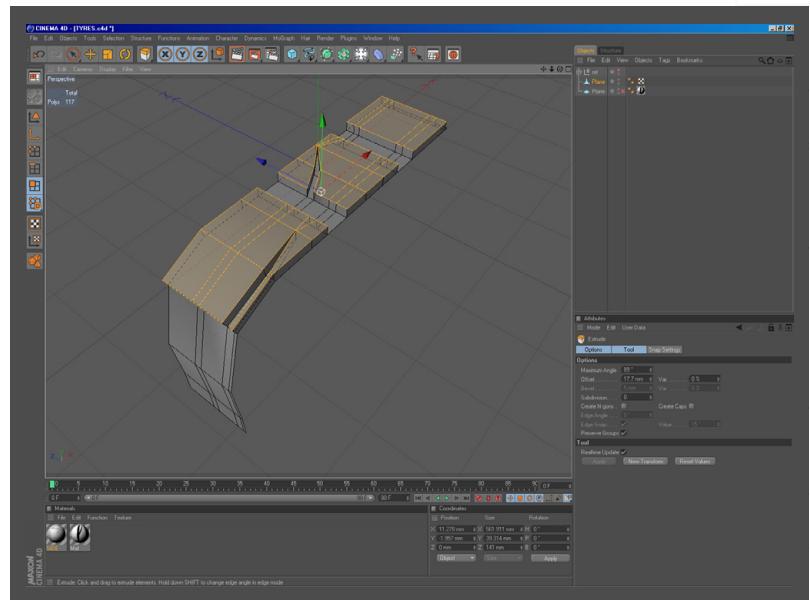
Now select the three vertical black lines and extrude them down (**Fig15**).

Fig 15
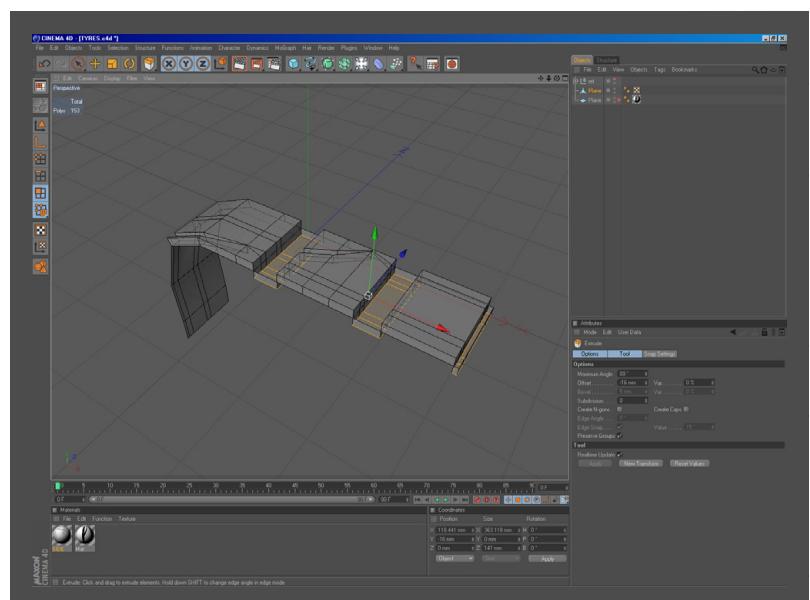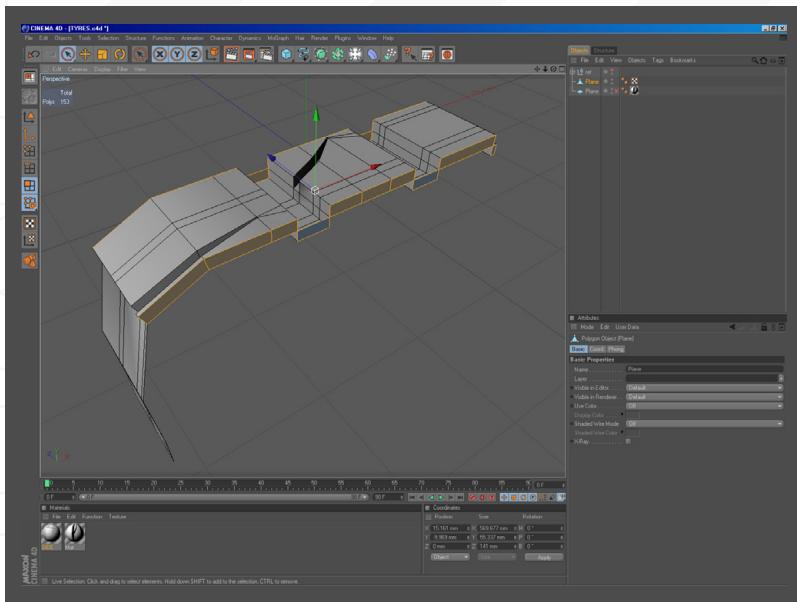
Fig 16

All of this extruding has created a few polygons that we don't need, so we should delete them now otherwise there will be problems later (**Fig16**).
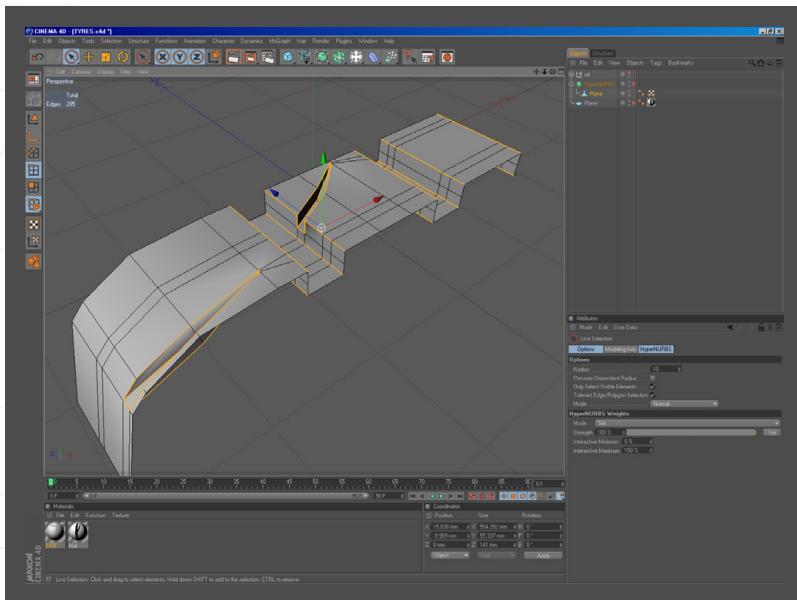
Fig 17

You will now need to smooth out the outside rim of the tyre and the cut out notches after the extruding. If we add a hypernurbs now it will soften the edges too much, so we need to select some edges and bevel them to give definition (**Fig17**).
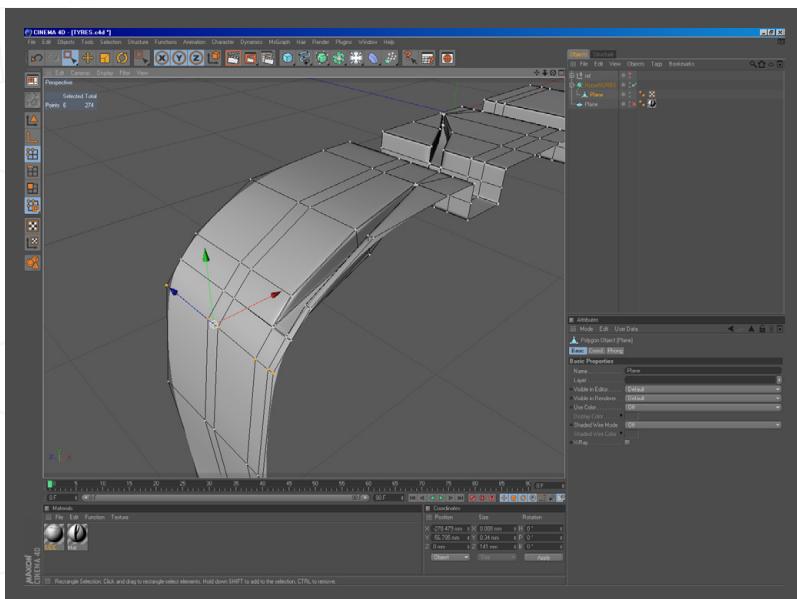
Fig 18

Using the bevel tool can create triangles - the quick way to solve this problem is to weld the points creating quads again. In addition, I've added a loop cut to help soften the notch on the outside of the tyre (**Fig18**).

Now we will need to create instances of the polygon object so that we can bend them later to form the tyre. Using the duplicate tool, I've created 65 instances along the Z axis (the same distance as the width of the polygon object). I've also added a symmetry object to the hierarchy to create the inside of the tyre (**Fig19**).

Fig 19
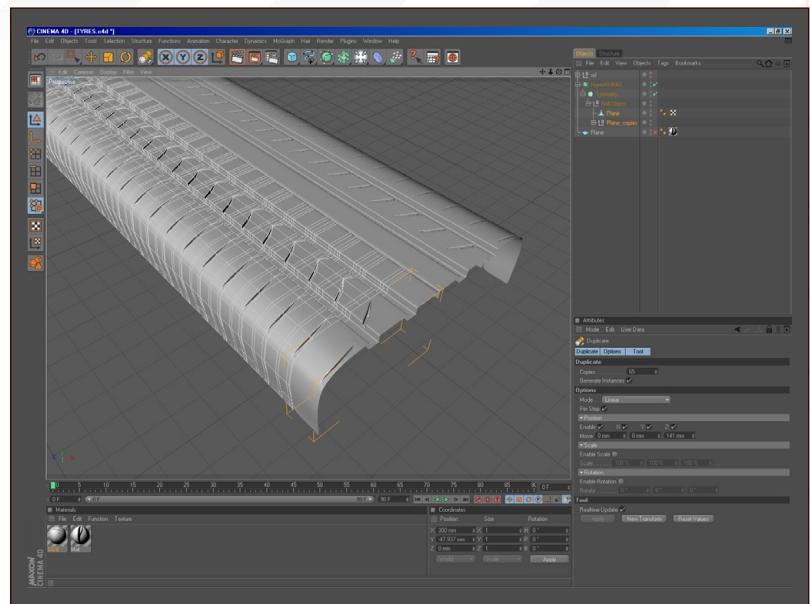
Add a bend object to the scene and give it some strength so that you can see which way it's bending. Move and rotate it so that it will bend the flat tyre around into a circle. Drop the bend object into the hierarchy with the plane and instances in a null object. You will need to try and make each section line up as closely as possible, even using increments of 0.01° of strength to get each edge as close as possible (**Fig20**).

Fig 20
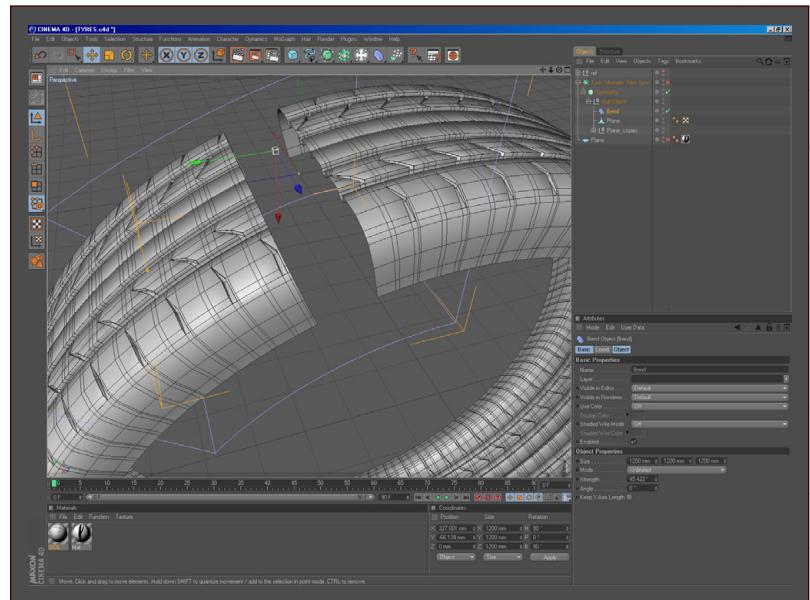
Select the null object and copy and paste it - this will be for a back up, so switch it off from the seen in editor and render. Now, go back to the null object in the hierarchy and make it editable. Select all of the polygon objects and connect them together. Delete the null object and replace it with the new polygon object created, remember to optimise the points to give a clean, joined mesh. Now add the tyre to the rim and scale it to fit (**Fig21**).

Fig 21
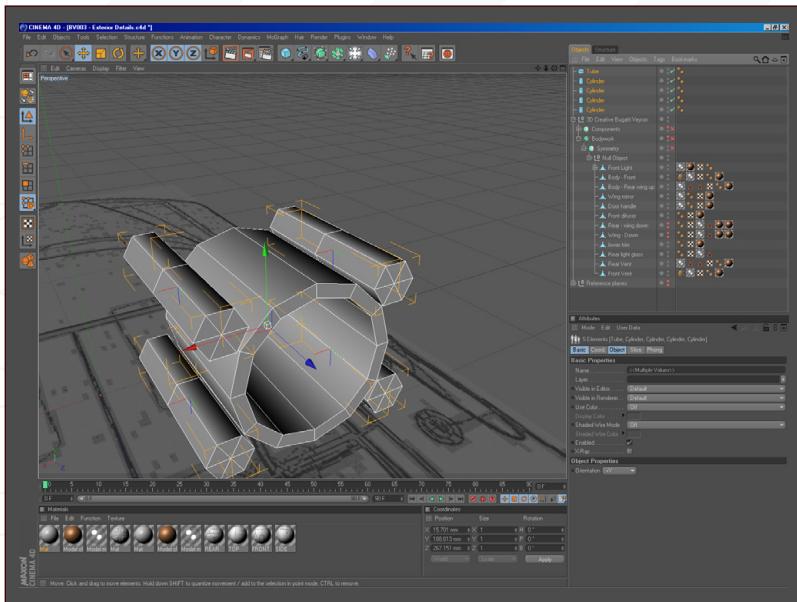
Fig 22

Note: I don't usually create the tyres in so much detail because they're rarely seen unless you create high resolution images. If you're struggling with poly counts then I would suggest using the tyre tread.jpg as a bump map instead of modelling the detail and using a simplified tyre model.

Right, let's tackle the engine and what an engine it is! First, add some cylinders and align them to all of the reference planes. This is the beginning of the housing that sits over the tubes at the rear of the engine (**Fig22**).
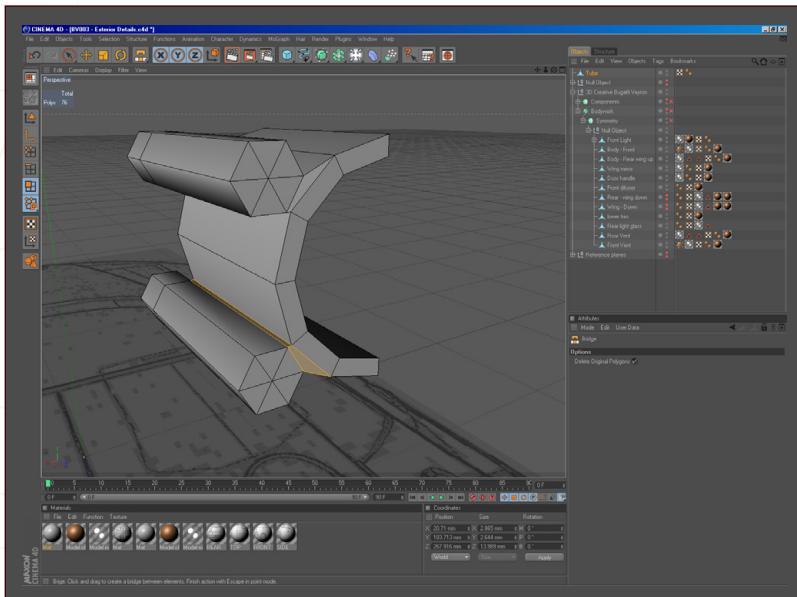
Fig 23

Connect the cylinders and add loop cut on the smaller cylinders. Bridge the gaps between the cylinders to join them (**Fig23**).
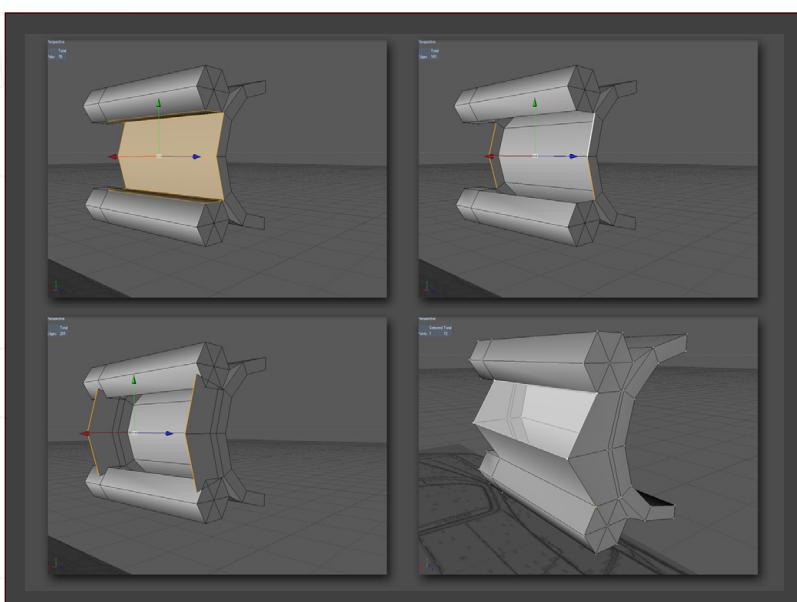
Fig 24

Now delete some polygons and edge extrude out to close off the gap between the two smaller cylinders. Select the corresponding points and weld them together, after that, bridge the hole that's left (**Fig24**).

Add loop cuts to define the edges and apply a hypernurbs object. After looking at more reference images I realised that the lower, smaller cylinder wasn't present, so simply select the points and delete them (we all make mistakes!) I've added a symmetry object to complete the overall shape, but you'll need to collapse this to give a solid polygon object to carry on with the next section. Polygon extrude out the left side and begin to shape it into a basic cylinder (I'm not actually sure what this does, but it's definitely in the reference photos) (**Fig25**).

Fig 25
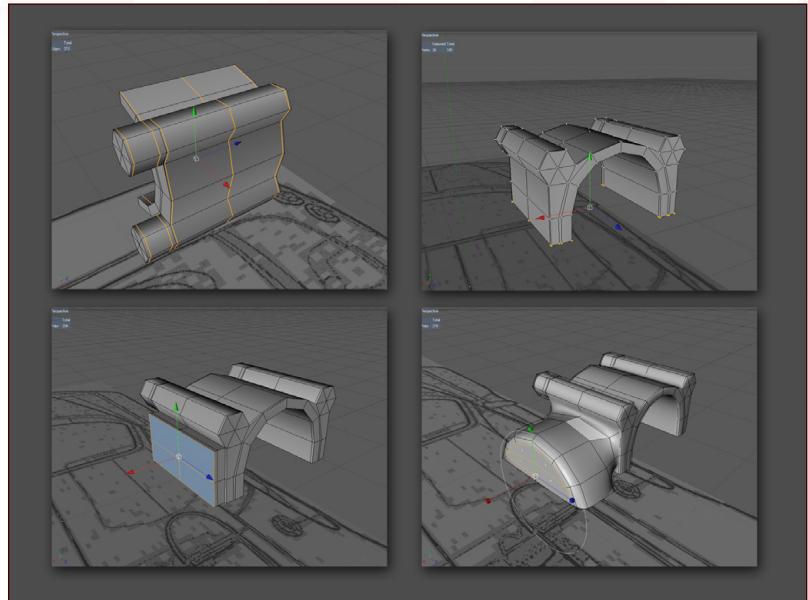
Extrude the outer edge inwards to create thickness and move points to help the flow between the cylinders. Again, I've made a mistake (I know what you're thinking "does he really know what he's doing?") but it's easy to solve by deleting the points and closing the resulting holes. Then loop cut the inside to bring back the definition (**Fig26**).

Fig 26
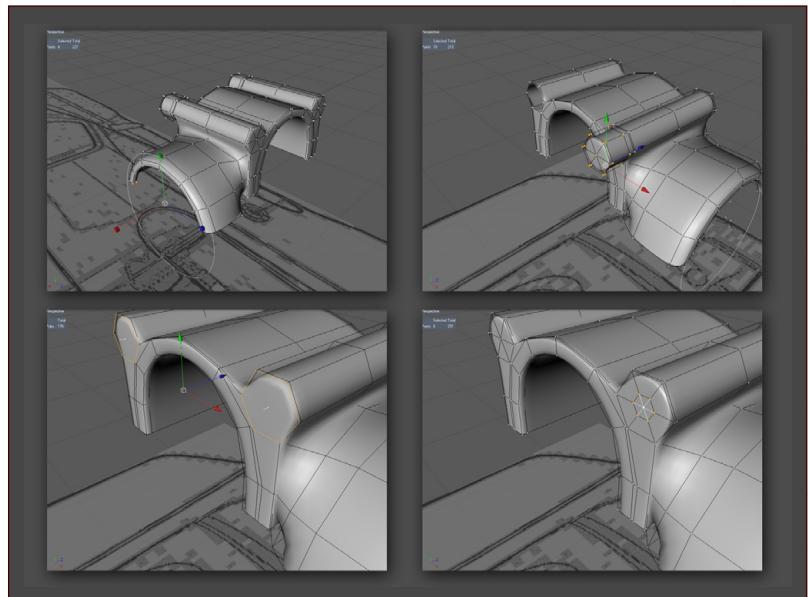
Select the polygons of the front section of the housing and split them. This new object sits in front of the housing. Select all polygons and extrude out then extrude inner. Extrude out once more and add loop cut for definition (**Fig27**).

Fig 27
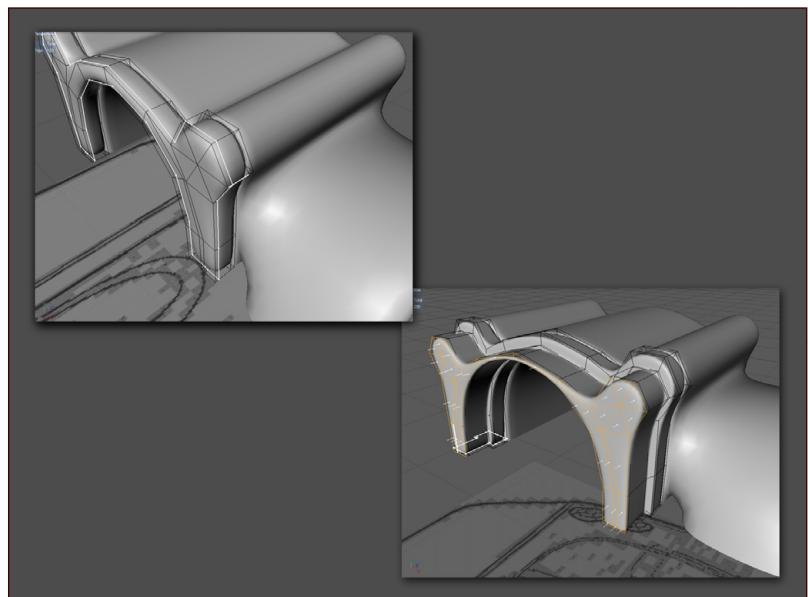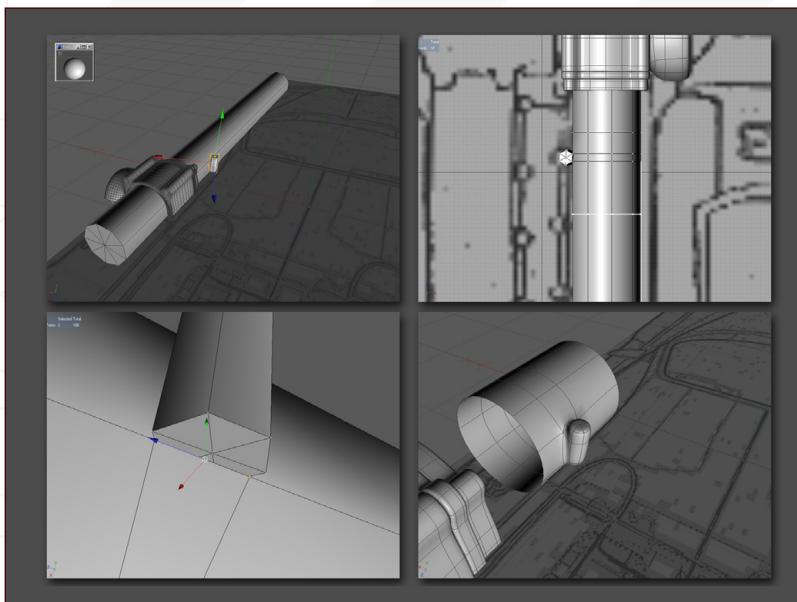
Fig 28

Now for the large cylinders that run the length of the engine. Add two cylinders to the scene and match the rotational segments shown. Make both editable and loop cut the large cylinder. Connect both cylinders and go to wireframe mode to weld the two cylinders together. All we're doing is creating a small section then we'll duplicate and join them (**Fig28**).
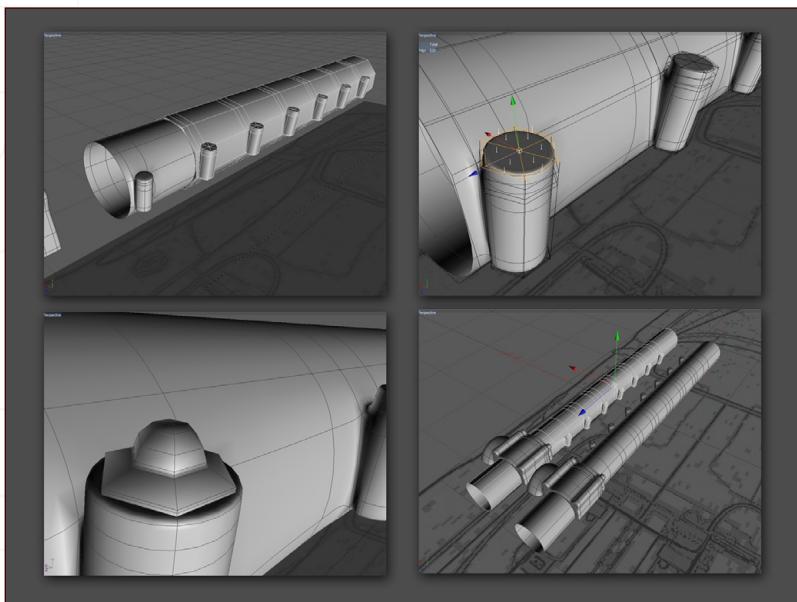
Fig 29

Duplicate the section several times until it matches the reference. Collapse the instances and connect them together. Optimise all points and loop cut to add definition. You can either select the tops of the small cylinders and extrude them to create the little nipples or just select one and duplicate it later. All I did was split the polygons and extruded up whilst scaling to get the desired shape. Once done, copy and paste the large cylinder, rotate it 180 and align it offset to the opposite side as shown in the top reference plane (**Fig29**).
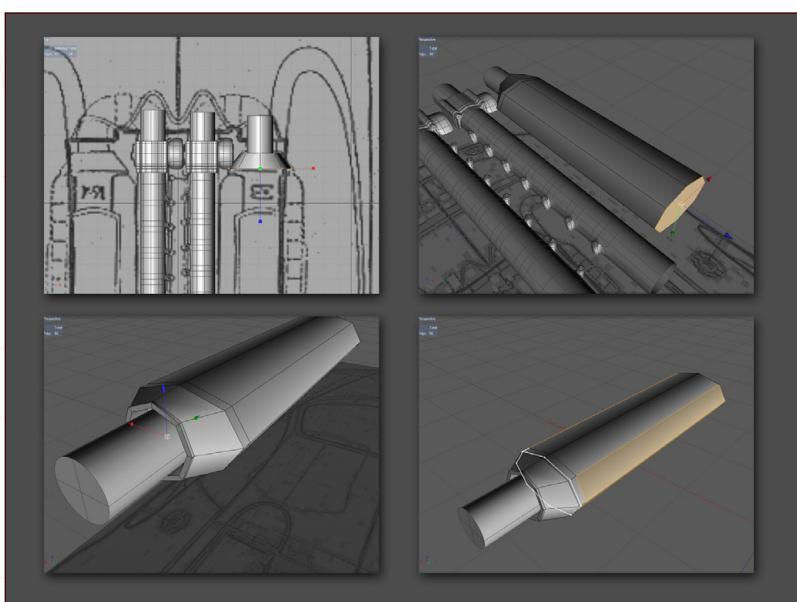
Fig 30

Now add two cylinders and align them to the large turbo. Make the larger cylinder editable and begin to scale and extrude to match the shape. Loop cut and extrude the end inwards to accommodate the smaller cylinder (**Fig30**).

More loop cutting and extruding of polygons to create the shape (**Fig31**).
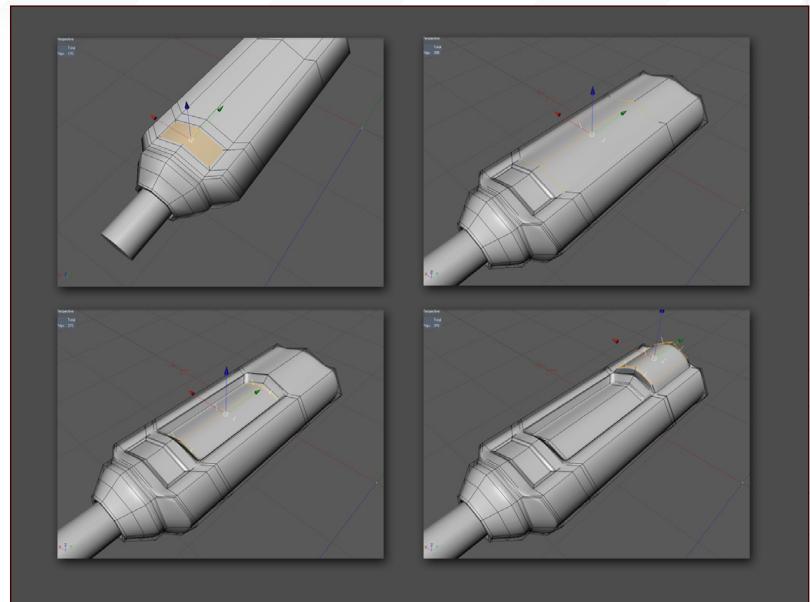
I've added in two cylinders and a filleted cube to create the pipes at the front of the engine (**Fig32**).

Fig 32
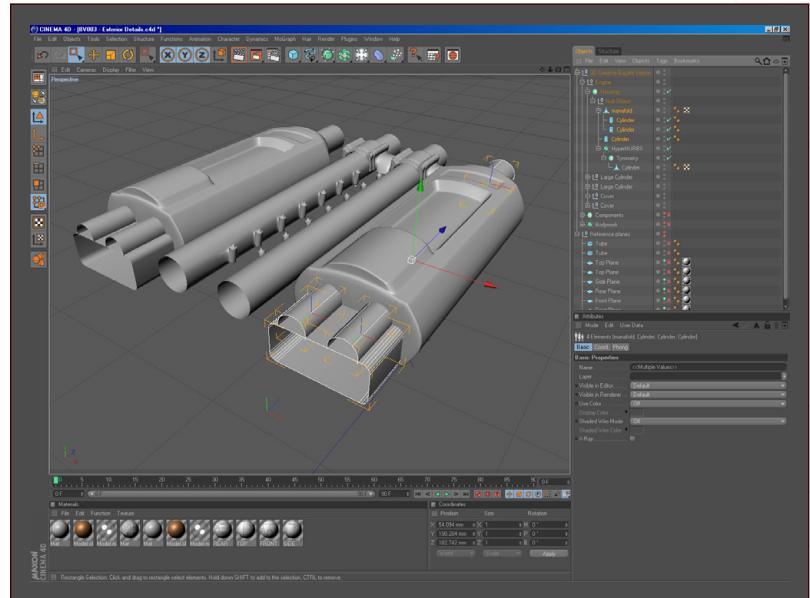
Open the EB logo.eps file in cinema and connect all of the splines to form the logo. Copy and paste this into the Bugatti Veyron scene and orientate it above the gap on the turbo. Now make sure the spline is above the engine and in the top view project the spline onto the engine. Now all you have to do is add an extrude nurbs. Repeat this for the 16.4 on the opposite side (**Fig33**).

Fig 33
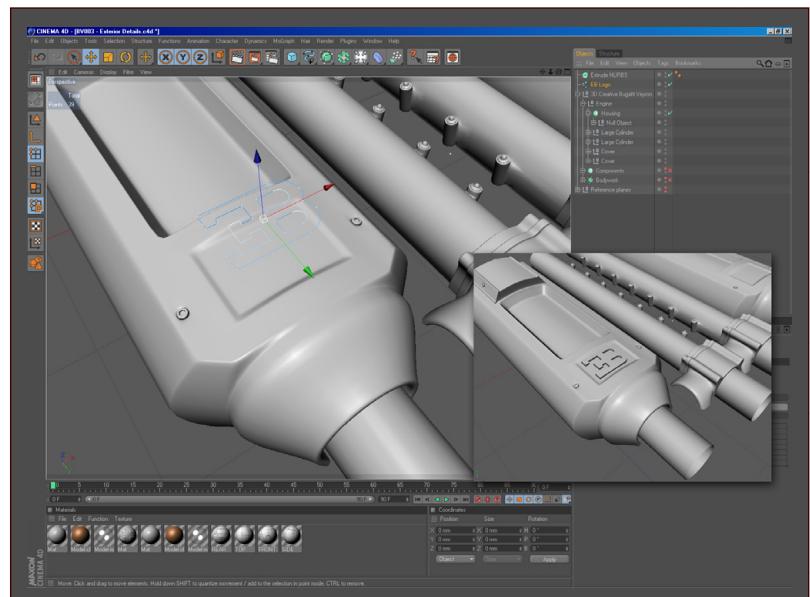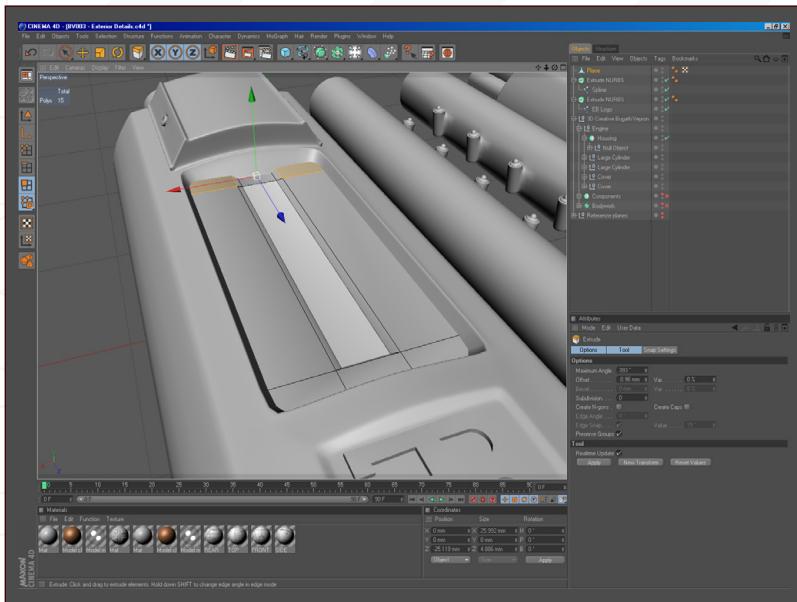
Fig 34

Now add a plane to the scene and align it to the large hole on the top of the turbo. Loop cut it twice in both directions, aligning the cuts to the indents on the turbo vent (**Fig34**).
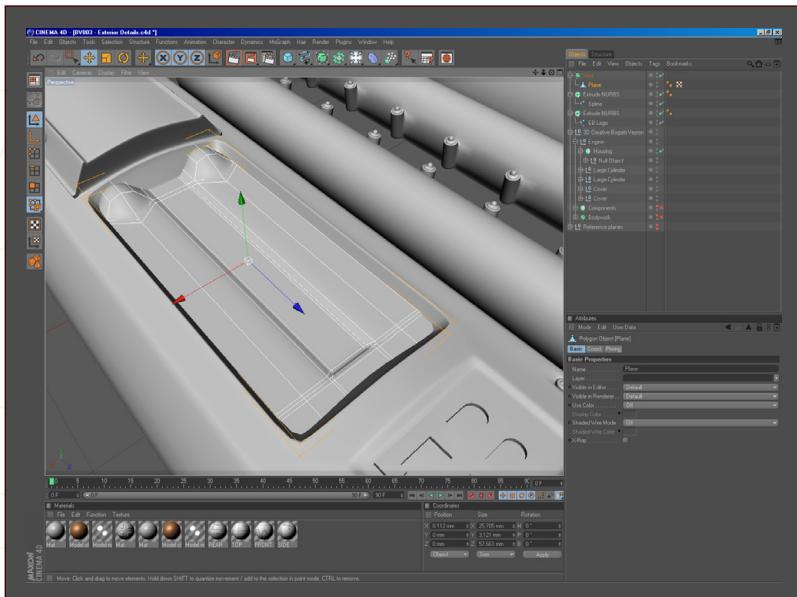
Fig 35

Now extrude the small curved sections at the front of the vent. Loop cut in extra points to help shape them. Extrude the inner section down to form the indent along the length of the vent and loop cut to define edges. The holes will be added later using a material (**Fig35**).
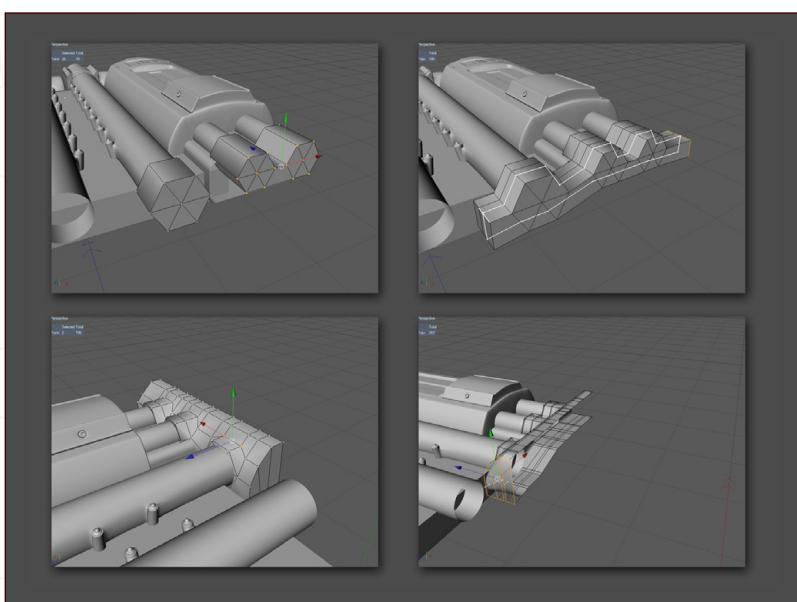
Fig 36

Add three 6 sided cylinders and a cube to the scene, the cube is just a filler object underneath the engine as we won't be going into any more detail underneath the turbos. The cylinders will become the bodywork that overlaps the front of the engine and holds the rear window. Connect the cylinders together then bridge each section shown. Optimise the points to clean any vertices and to join the ends. Loop cut two or three times and move the points so that they slope up towards the cabin. Delete the entire front facing polygons and the ones straddling the X axis, we'll use a symmetry object to mirror the opposite side (**Fig36**).

I've added some bolts to the turbos and mirrored all of the sections over to complete the engine (**Fig37**).

Fig 37
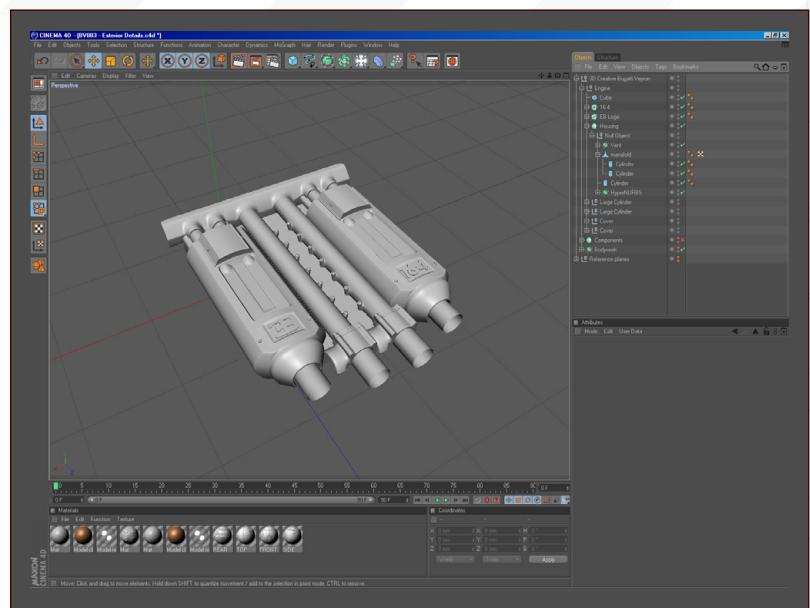
Next is the rear diffuser which sits beneath the boot/trunk of the car. Start by selecting the polygons shown and splitting them from the body (**Fig38**).

Fig 38
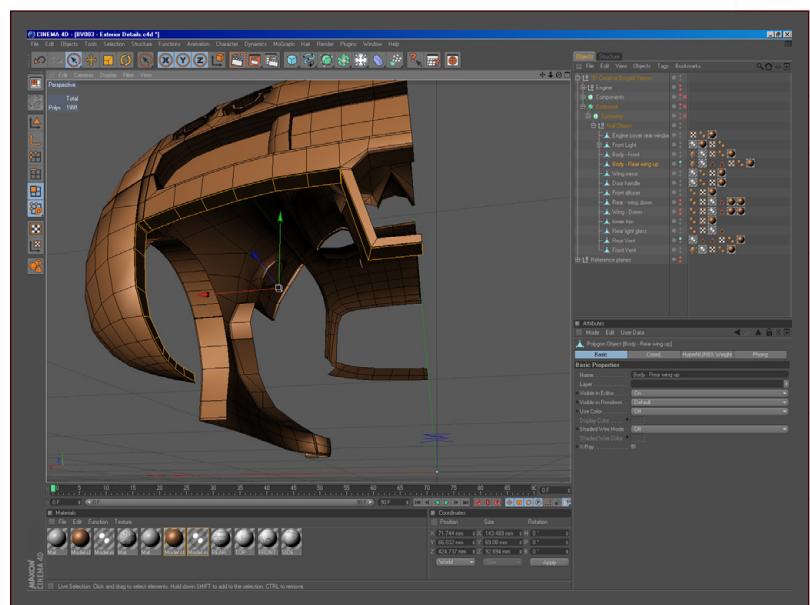
Select all of the polygons of the new object and extrude them downwards. Select the rear facing polygons and begin shifting them out along the Z axis slightly; this part curves out as it goes to the centreline of the car. Delete the inner polygons and begin to shape the inside curve (**Fig39**).

Fig 39
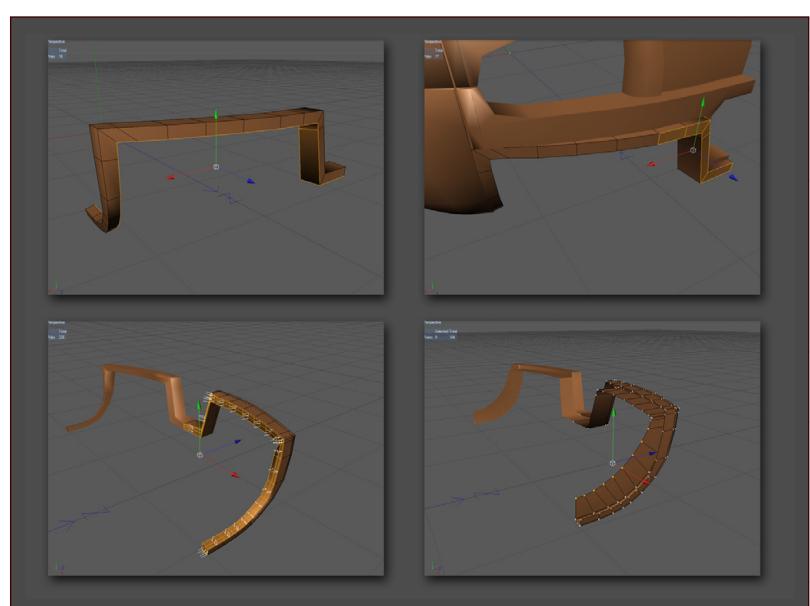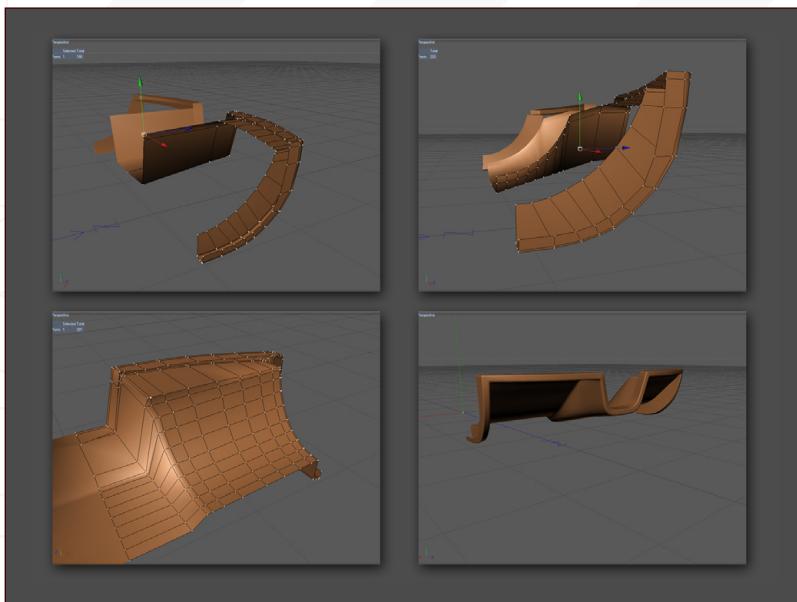
Fig 40

Extrude the outer edges around the exhaust inwards and add loop cuts corresponding with the points on the other side. Now move the points so that they align in the side view and begin to bridge the edges. Once bridged you will need to loop cut in the Z axis and attach the points to the corresponding points on the outer section. All that's needed to do then is to tweak the smooth transitions from the flat to the curve. You can use the set point value with the settings changed to centre to help align all the points and make it easier (**Fig40**).
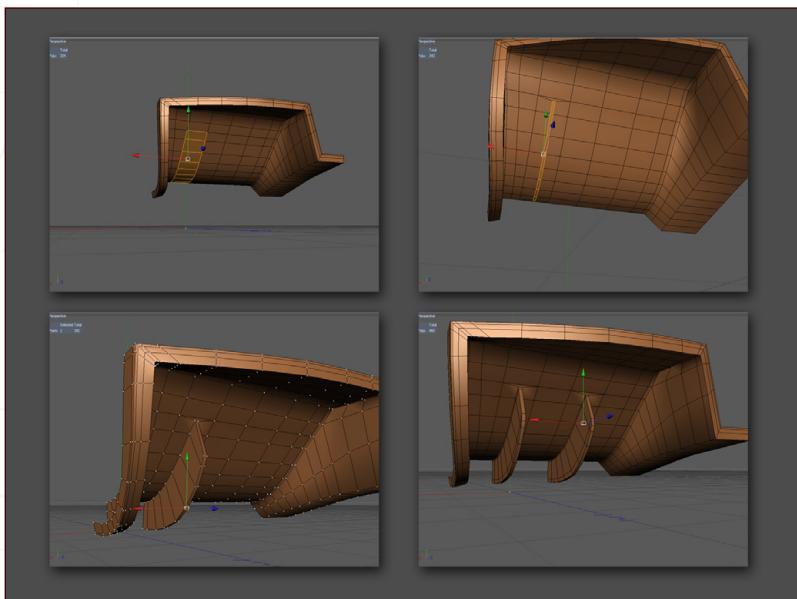
Fig 41

Now for the fins, select the polygons and extrude inner. Extrude out and begin to shape; you will need to find photo reference for these. Loop cut the base to give thickness and to define the base. Repeat this for the other fin (**Fig41**).
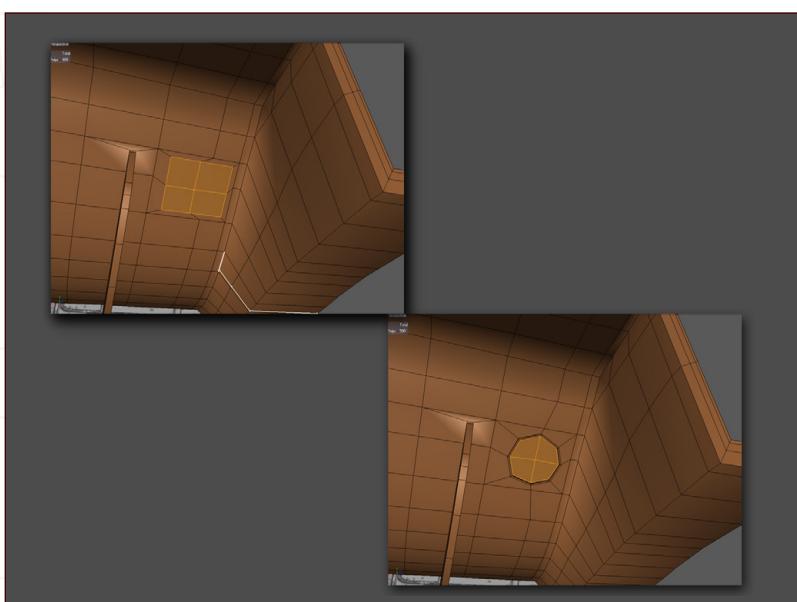
Fig 42

There is a small vent/exhaust which is easily missed. Simply extrude inner the four polygons and align them so that they are square and all equal. Extrude in, extrude inner, extrude out, inner and extrude back in again to form the exhaust (**Fig42**).

Now the rear diffuser is completed by adding a symmetry object and a hypernurbs, or you could just drop it into the main body hierarchy (**Fig43**).
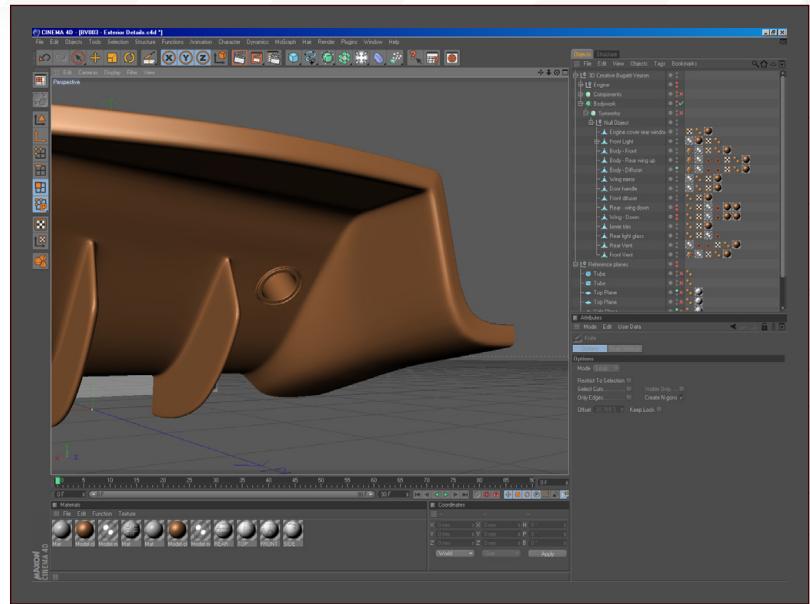
Time to model the exhaust. Add a plane with 4 segments in each direction to the scene and align it to the references. Make it editable and begin to shape the points to match the rear view reference. Select the polygons and extrude in, extrude inner, extrude out, extrude inner, and extrude in again to create the basic shape. Loop cut near to the corners to give the exhaust rounded corners when it is placed in a hypernurbs. I've cut mine in half and put it into the main body hierarchy, but you can leave it separate if you want (**Fig44**).

Fig 44
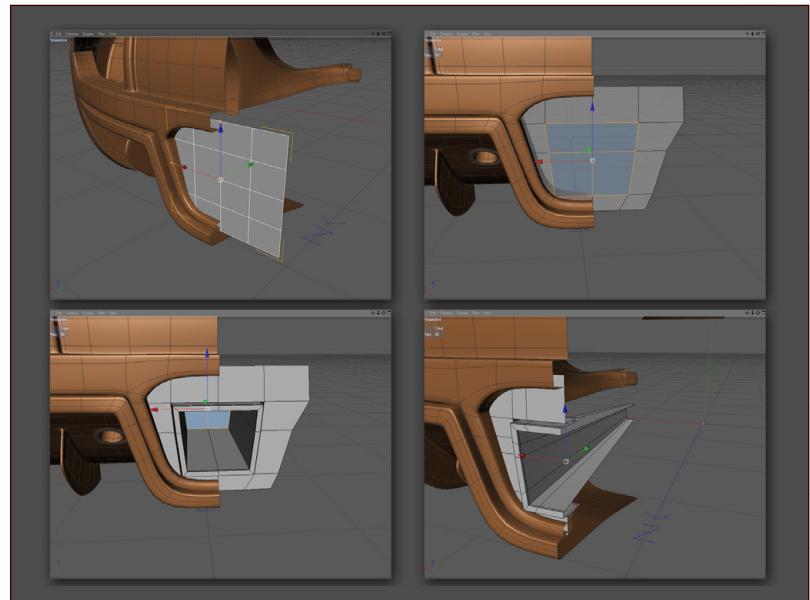
Not much left now I promise. We need to fill in the wheel arches so make sure you drop in the newly created wheels and rims into the scene. Select the inside points of the rear wheel arch and set point value to centre X axis. Now move the points, making sure that there is enough room for the wheels. Edge bridge between the two lowest edges of the inside arch (circled), close the polygon hole that's left and loop cut the edge to define it. You will need to clean up some points, but you won't really see these as they will be a dark material later (**Fig45**).

Fig 45
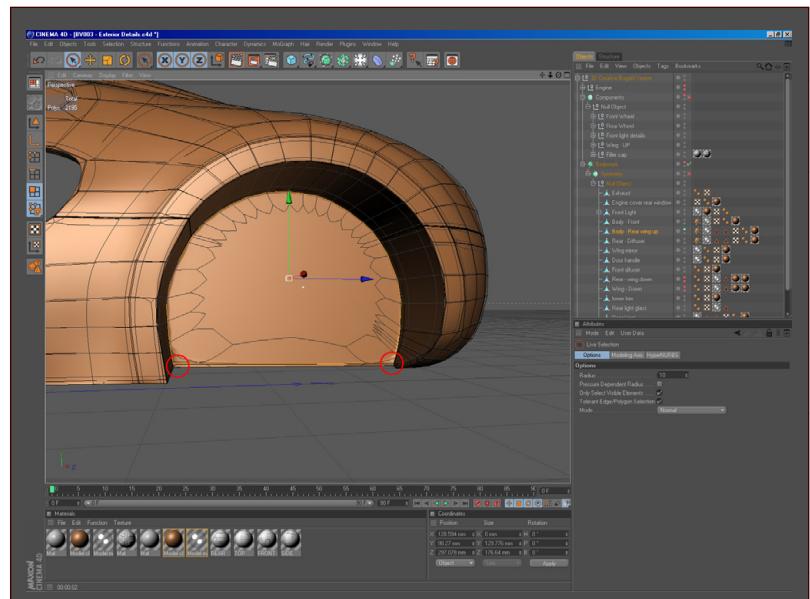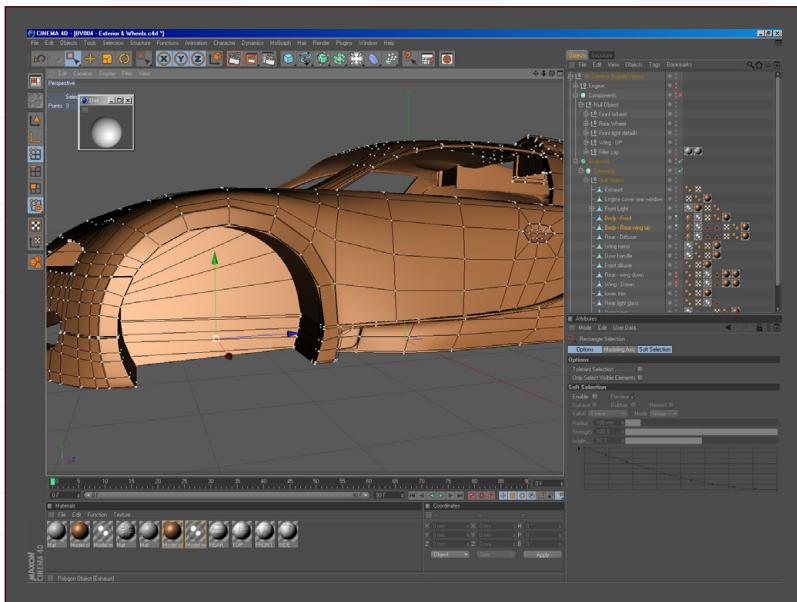
Fig 46

Repeat the same thing for the front wheel, but remember to select both the front and back polygon objects. You will be able to bridge between them, but it won't actually join them together, only create polygons (**Fig46**).
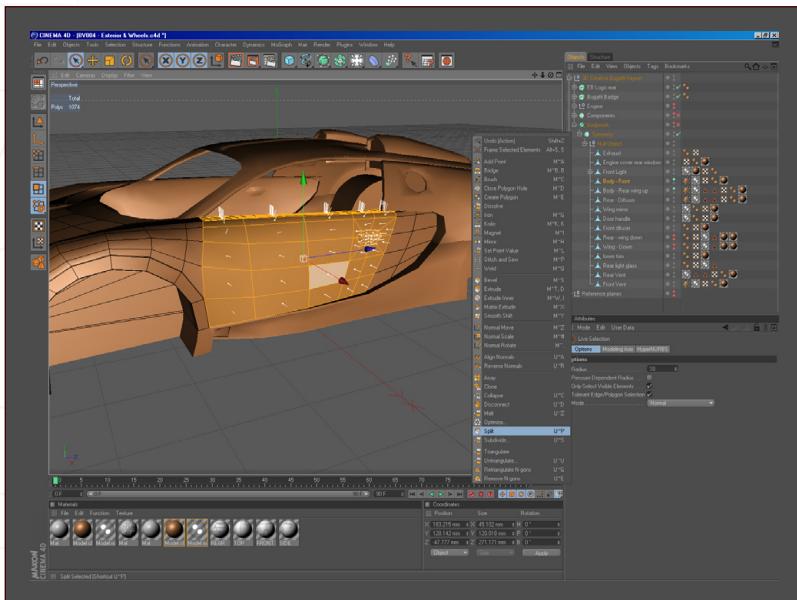
Fig 47

The last thing to do for this section of the tutorial is to separate the doors from the main body. Simply select the polygons for the door and split. Delete the polygons in the front body object where the door should be and rename the new object to door (**Fig47**).

That's completed the exterior of the car and in the next issue we'll be covering how to add thickness to the body and the doors, inserting windows and creating the interior of the car.
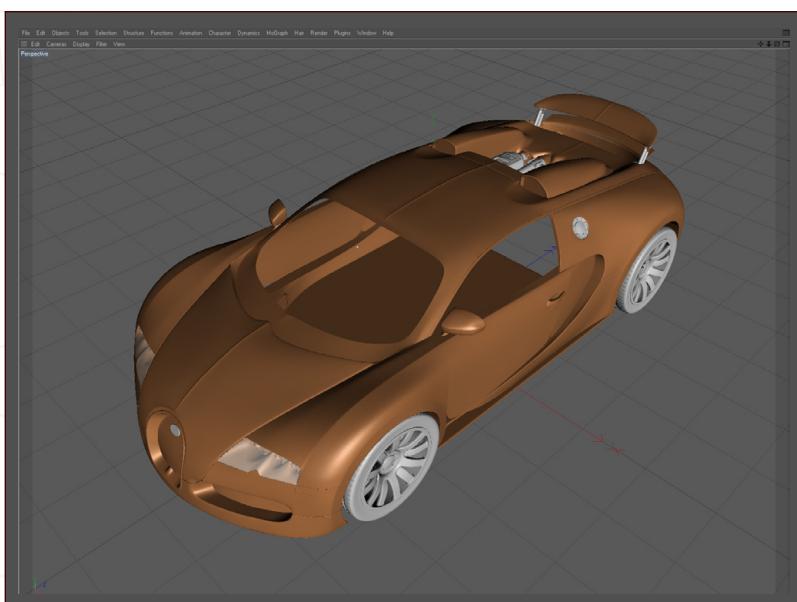
BUGATTI VEYRON
PART 4: WHEELS, TYRES & RIMS

Tutorial by:

EMLYN DAVIES

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Bugatti Veyron
car modelling series

lightwave

Due to circumstances beyond our control, this part of the Bugatti Veyron Car Modelling Series will now be available in the May issue of 3DCreative magazine, along with Parts 3 and 5.

Craig A. Clark has unfortunately had to pull out of the series and so we hope you will join us in welcoming **Vojislav Milanovic** who is going to complete Parts 3 - 7 for 3DCreative over the coming months, to bring us back on track.

We do of course apologise for the inconvenience caused by this change in the schedule, and we hope you will stick with us for the 'bumper' LightWave parts planned for the May issue.

Thanks for your understanding. Ed.

Blueprints available here:

Bugatti Veyron
car modelling series

Maya

The series will cover an in-depth and comprehensive guide to modelling the amazing Bugatti Veyron car, from start to finish, and will focus on the key techniques and stages involved in building the chassis, as well as details such as the windows, lights, vents, petrol caps, engine parts and so on. We will then move on to creating the wheels, including tyres and hubcaps, before going on to building and incorporating an interior, namely the dashboard and seating. The series will proceed with a section on creating and applying materials for the numerous parts of the car, such as the paint work, chrome, rubber and glass, before concluding with a tutorial devoted to setting the scene for a finished render. The final part will cover the importance of a good lighting rig and light parameters, as well as the importance of a camera and the integral part that the rendering settings play in showcasing the model for a portfolio.

This series aims to show a comprehensive guide to creating a finished car for people new to this type of exercise, but is not suitable for beginners who are not familiar with using 3D software. The tutorials do not detail every single step of adding individual edge loops and vertices, but does endeavour to outline each important stage and explain the crucial techniques necessary to following the exercise.

The schedule is as follows:

Issue 029 January 2008
Modelling the Chassis - Basics

Issue 031 March 2008
Modelling the Chassis - Details

Issue 032 April 2008
Wheels, Tyres & Rims

Issue 033 May 2008
Interior

Issue 034 June 2008
The Materials & Finishes

Issue 035 July 2008
Lighting Set up & Render

Enjoy ...

Blueprints available here:

www.the-blueprints.com

BUGATTI VEYRON
PART 4 - WHEELS, TYRES & RIMS

Well if you've made it to this fourth part, congratulations! At the end of this part we should have a completed exterior of the Bugatti Veyron (and if I have missed out any items, you should have the knowledge now to create them with little problem). We will begin by completing the exterior accessories and then move onto the creation of the wheel.

Let's begin with what is probably the most time consuming accessory to create – the air brake. We will begin the air brake by filling in the body work detail, using our existing geometry to line the air brake up properly. We will then raise it into the air and model a basic version of the hydraulics. Create a polygon plane and position it in the gap we have left for the air brake. Begin slicing and shaping your plane to fill in the gap, making sure to check how both the back panel and air brake geometry fit together when bevelled and smoothed. Remember to model the underside of the airbrake too if you intend on modelling the hydraulic arms – **Fig01** shows how my air brake looks. Once happy, make sure to model the little ridge along the middle of the panel, again making sure that it lines up with the back panel – you should have no problems with this by now.

Now it's time to add the hydraulics for the air brake. I will show you how to create a fairly basic version of the hydraulics, but you can go as crazy with detailing as you like. I think the best way to model this object would be to just construct the hydraulic system in place and then manually move the air brake panel to the top of the hydraulics. The hydraulics are basically made up of a number of cylinders joined by rectangular pieces, so shouldn't pose too many problems. Bring in a cylinder and scale it to about the size of the forward most cylindrical piece. I chose to model this piece in its most upright position so I had to rotate it into place. Duplicate the cylinder for the next piece and

Fig 01

Fig 02

Fig 03

Fig 04

Fig 05

Fig 06
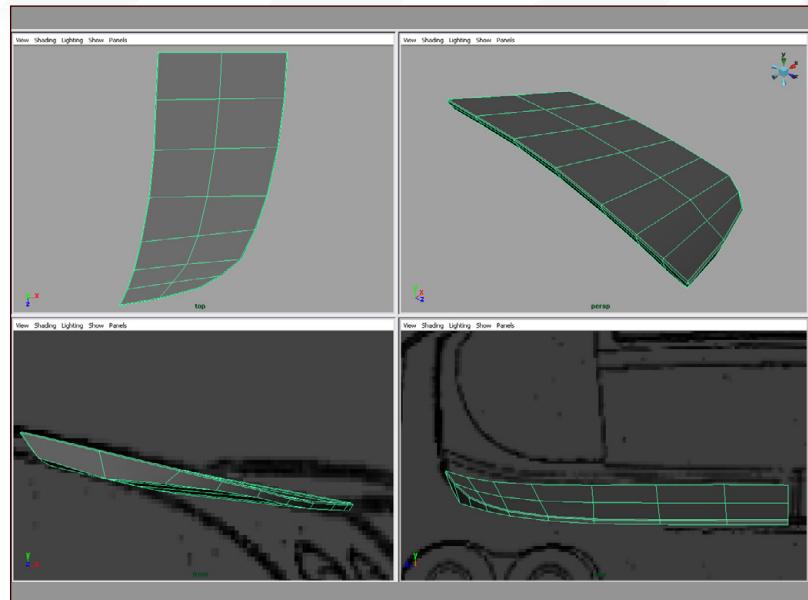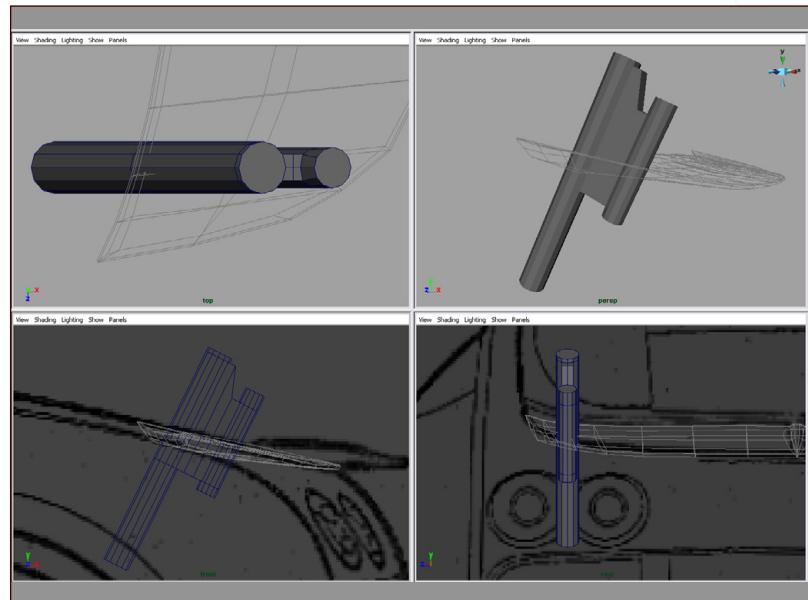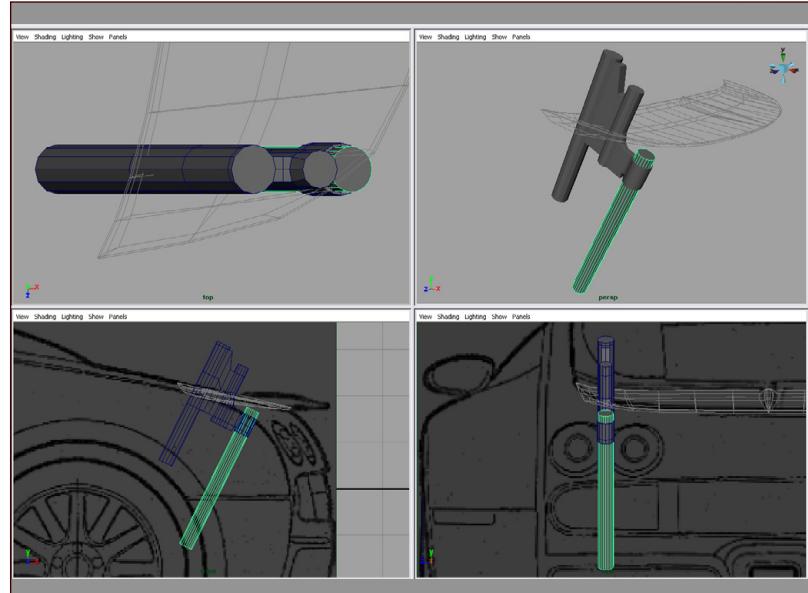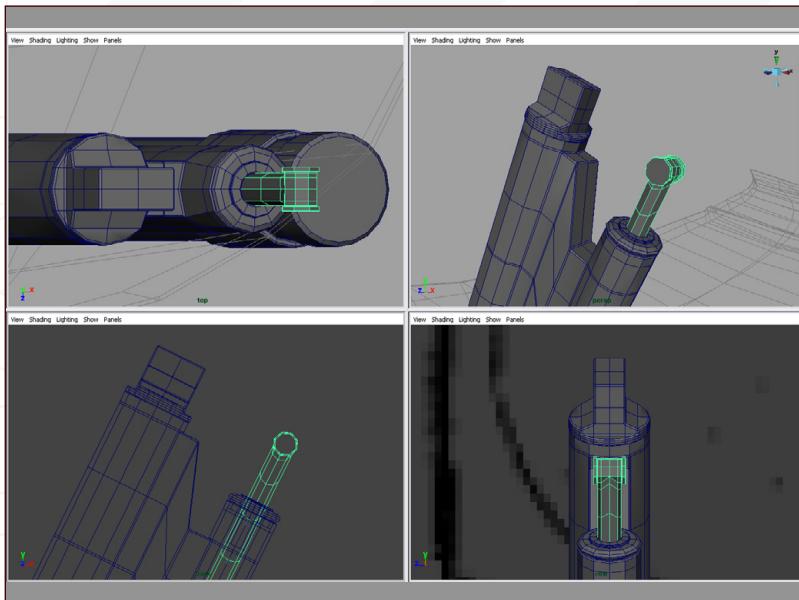
scale it uniformly a bit, scale the height down quite a lot and then position it. Connect these two cylinders up with an extrusion (**Fig02**).

Then there is another cylinder a little further along (that slides up and down a pole) so make sure to create this in the same way, along with the pole (**Fig03**).
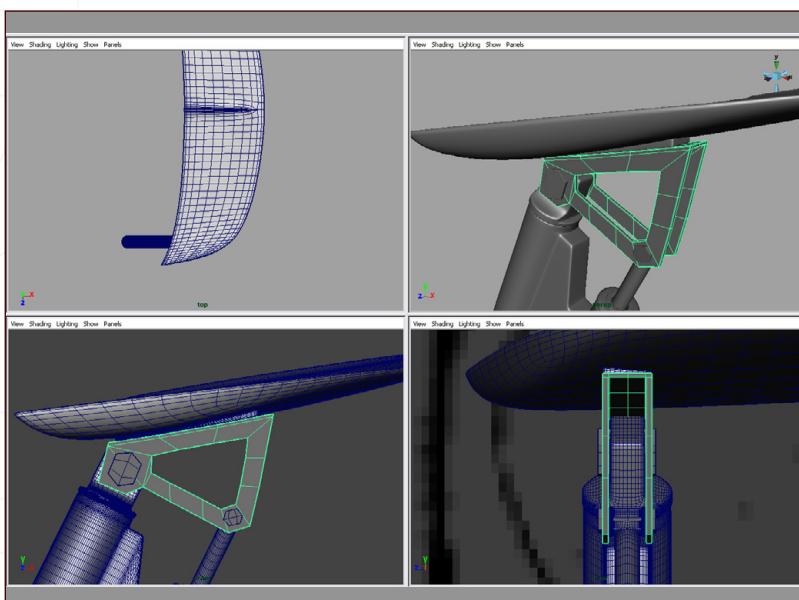
So now it's just a case of bevelling the hydraulic piece and cutting in any more necessary detail. The next step is to add some plastic caps to the back two cylinders – just construct them from modified cylinders using your references (you could even get away without smoothing these pieces using the Soften/Harden Normals tool with a value of about 35, but feel free to mesh smooth them if liked). The hydraulic rod at the back of this is constructed by merging two cylinders together and adding a few extrusions and bevels (**Fig04**). Make sure that the bottom of the rod goes quite a long way down, so that if you were to rig the air brake it wouldn't slide out of the mesh.
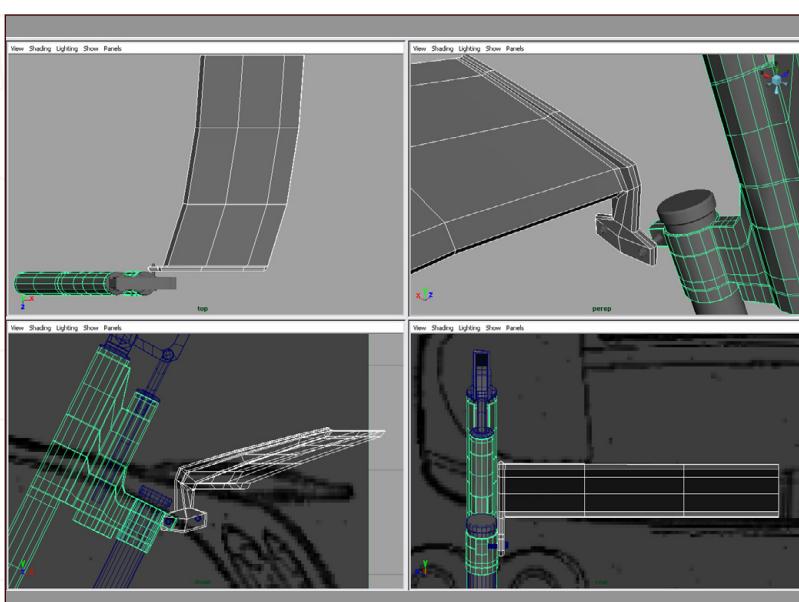
Model out the triangular section that the wing sits on, making sure to add some bolts and a little plate that sits between the wing and the triangular piece (**Fig05**) – you will need to place the wing piece in an elevated position based on the angle of the hydraulics.

It's now time to model out the second little wing that rotates out of the car as the hydraulics raise the air brake. This piece isn't too difficult; it's basically a modified box. I started with the piece that attaches to the hydraulics and worked towards the centre. Bear in mind that you may have to shrink the hydraulics that you have modelled to accommodate this second wing. I ended up having to do this and I achieved this by moving everything along one of the horizontal edges (using the Align Axis to Edge/Normal button found within the Move tool) so that I didn't have to do any remodelling. You may also like to add another piece to the hydraulics that the second wing attaches to and pivots around – depending on how you are going to render

your car, only model what will be seen (**Fig06**). Obviously, if you intend to render the rear wing up close, you may need to model the inside of the car a bit. This would basically consist of extruding our existing inner geometry down a bit further into the car and adding some other areas of detail so that the inside isn't too plain. I won't go into how to do this, because you should be able to manage this by now.

We'll continue the model by adding the accessories now. The front grill pretty much makes itself. Create a thin plane and place it where the bottom of the grill sits. Extrude around the opening created by the front bumper and bonnet, using the existing geometry as a guide for how far to extrude. Then pull rows of verts to line up with the existing mesh. Once that's done, extrude the inner edges back and pull them all in towards the middle of the piece, using the blueprint as a guide. Extrude the outer edges back also and bevel these to keep them nice and sharp. When you smooth you will notice that this piece is pretty much done with very little effort (**Fig07**).

All that remains is to add the triangular hump, which is extremely simple. Insert a new split just next to the centre edge. Now pull the back two centre verts upwards – keep an eye on your smooth mesh and it may also help to mirror the object. That's pretty much it, though I did find I was getting a bit of nasty smoothing at the base of the hump. This was fixed by selecting all of the base edges and performing quite a large bevel, which smoothed out the mesh error while keeping the shape of the piece intact (**Fig08**).

Add a triangular piece of geometry in the corner where the door meets the roof panel (this object is so simple I won't even waste time explaining how it was done). Fill in the window hole with a thin box that has been sliced up to line up with the existing mesh. You may also like to add a rubber strip along the bottom of the window, which again is a modified box primitive shaped to the curvature of the door. **Fig09** shows the final result of all of the above steps.

Fig 07
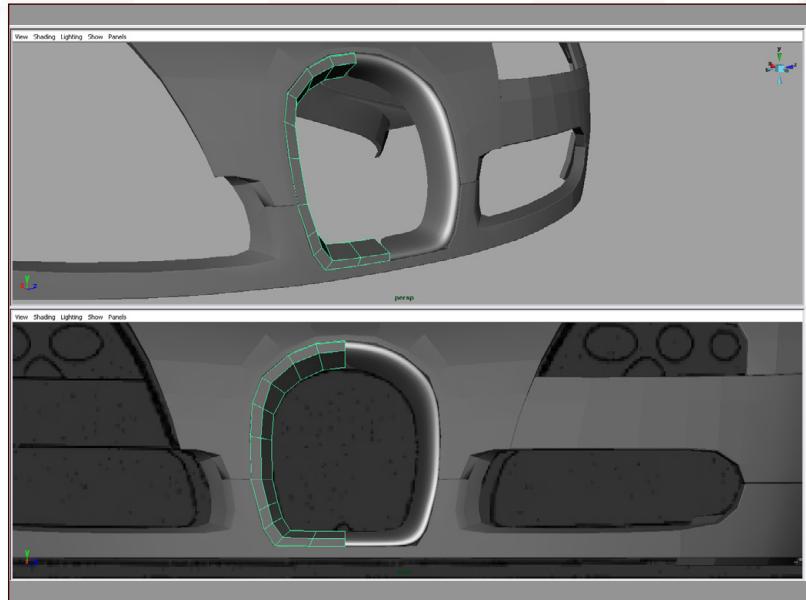
Fig 08
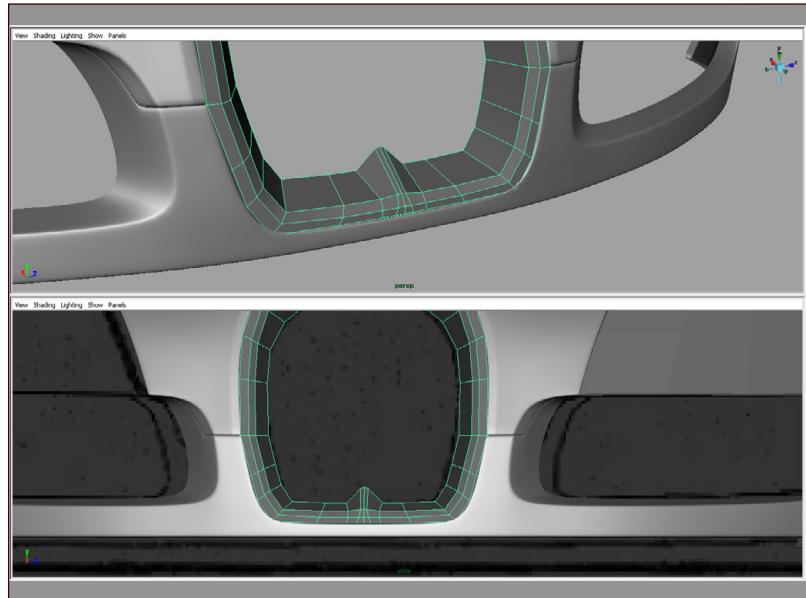
Fig 09
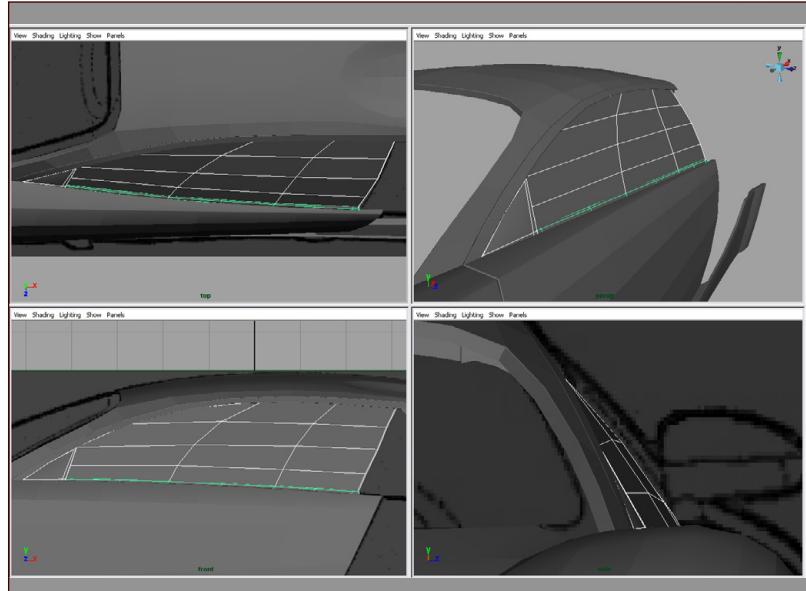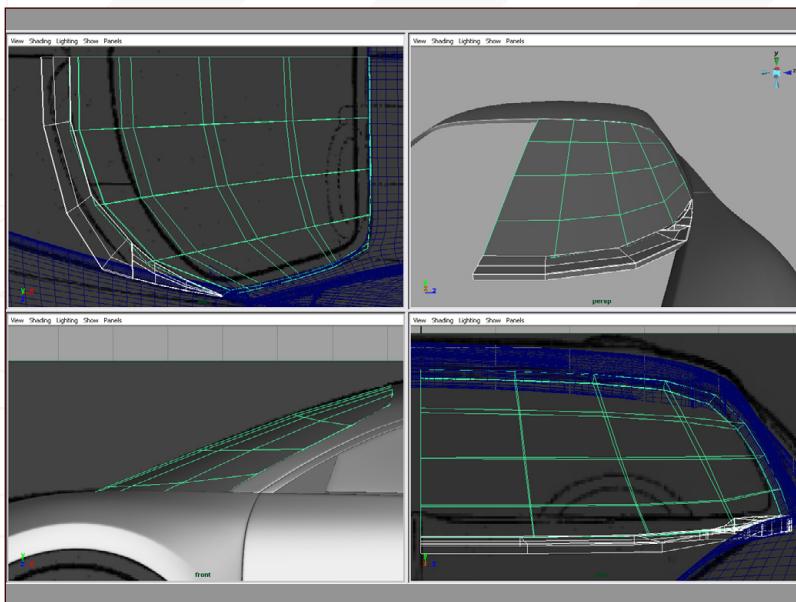
Fig 10

Let's move onto the front window now. Either follow the previous technique or snap to your curves you laid out to create the wind shield. Add a plastic strip that runs under the wind shield and carries on under the bonnet (where the wipers attach). All of these steps can be seen in **Fig10**.
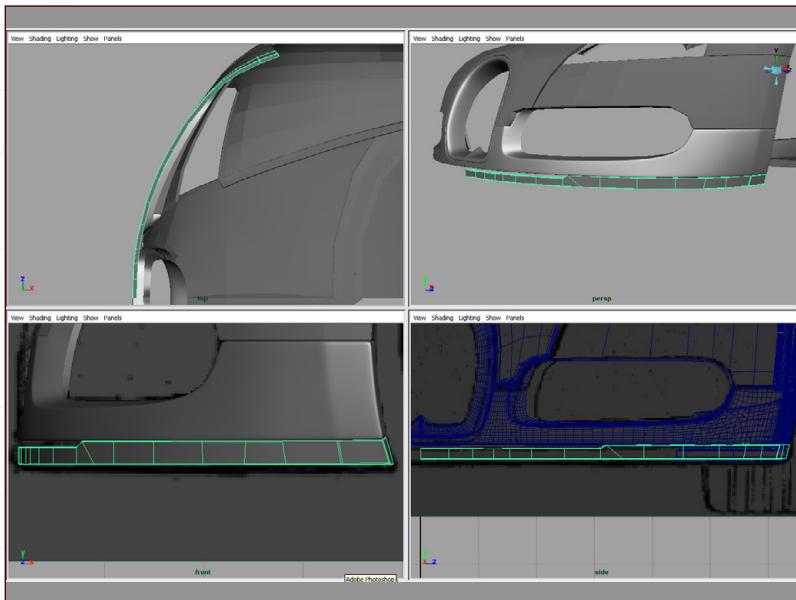
Fig 11

Just a few more bits now to finish off the exterior model. As most of these are pretty simple, I'll just draw your attention to each and show the final mesh. The front and side skirts are just modified boxes, though don't forget the air vent in the front skirt (**Fig11**).
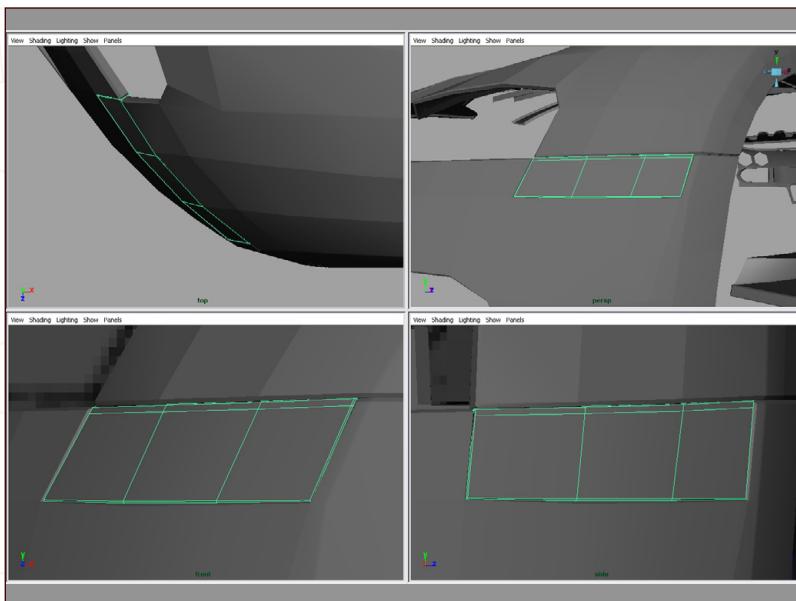
Fig 12

The front indicator was created in exactly the same way as the rear indicator (**Fig12**).

The side mirrors again are just modified boxes, with a cylinder inserted through the top of the door for the mirrors to sit on (**Fig13**). Make sure to create the hole for the mirror stalk, otherwise it will look like the stalk is passing through the door mesh.

Fig 13
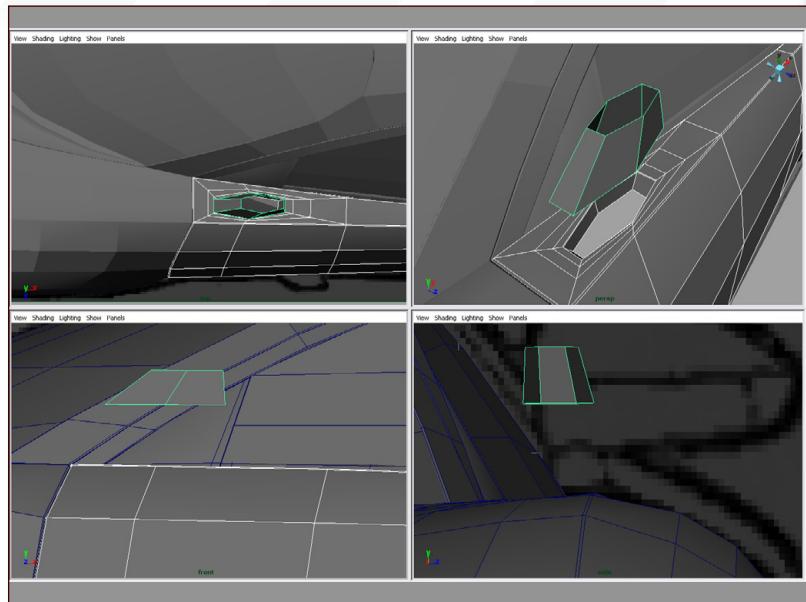
Make sure to extrude backwards to create an opening for where the actual mirror part sits (**Fig14**).

Fig 14
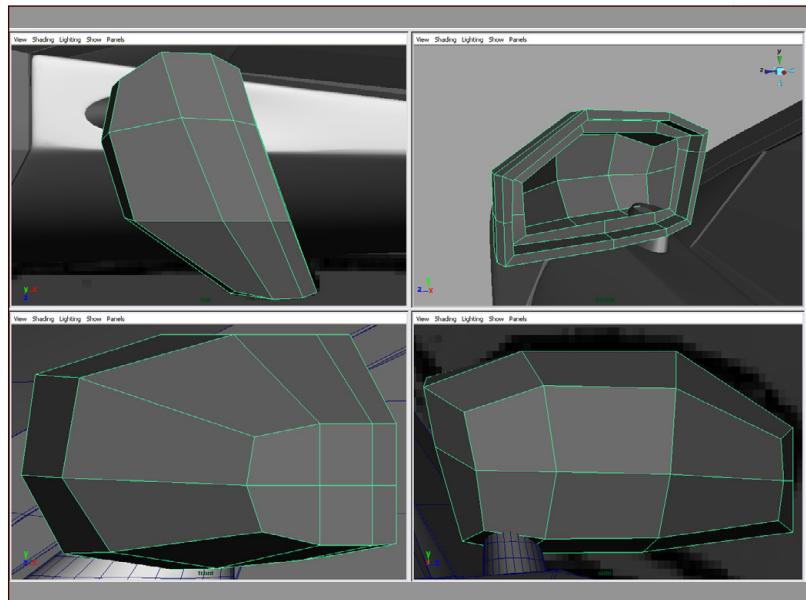
The side mirrors are actually split into three parts – the top and bottom casing and the side indicators. So make sure to add splits or reposition your verts so that you can extract each separate part (**Fig15**). It's just a case now of extruding each of the separate parts and bevelling the edges. Create the mirror piece from a modified box and place it inside the mirror casing. Don't forget to create a hole for the top of the stalk to slot into.

Fig 15
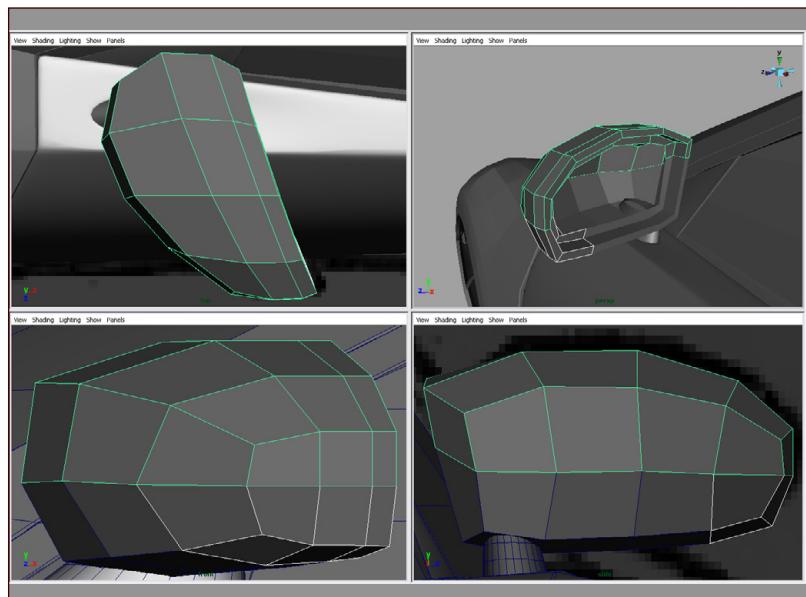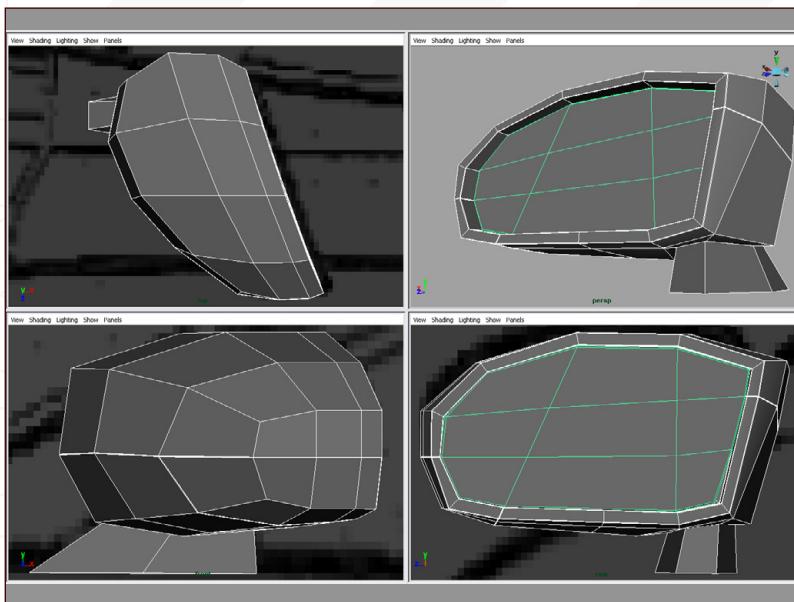
Fig 16

Fig16 shows how your mirror should look. It's always important to pay lots of attention to how your smooth version is looking.
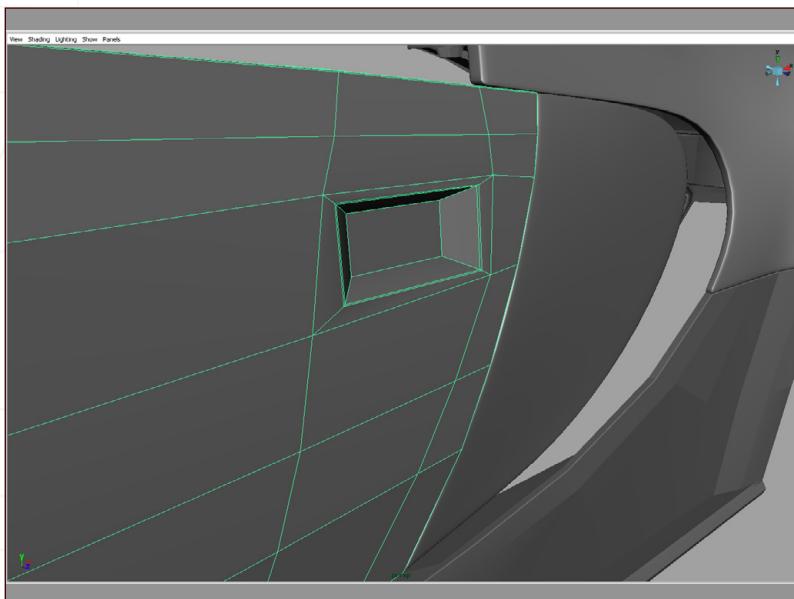
Fig 17

Next are the door handles. Create a square extrusion where the door handle sits and pull the resultant faces inwards and scale them a bit. Bevel the edges of the opening and you have your dip in the door (**Fig17**).
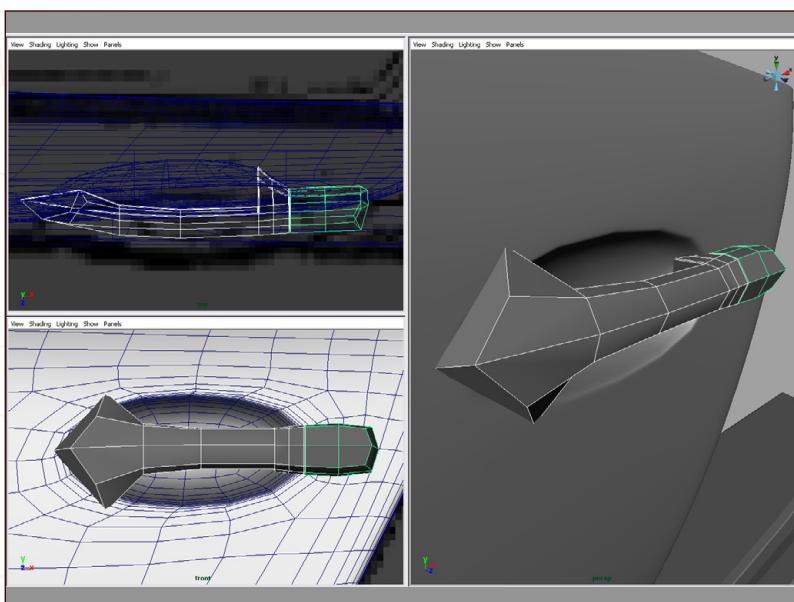
The actual handle is just a couple of modified boxes again (**Fig18**).

Fig 18

Moving onto the front lights now, create a thin

strip of faces running around the perimeter of the light hole. I like to add some helper objects to represent the lights because what we will be doing is building up the geometry around these helper objects and then all we need to do is place the lights in the holes created. The initial shape you are trying to create is shown in **Fig19**.

Fig 19
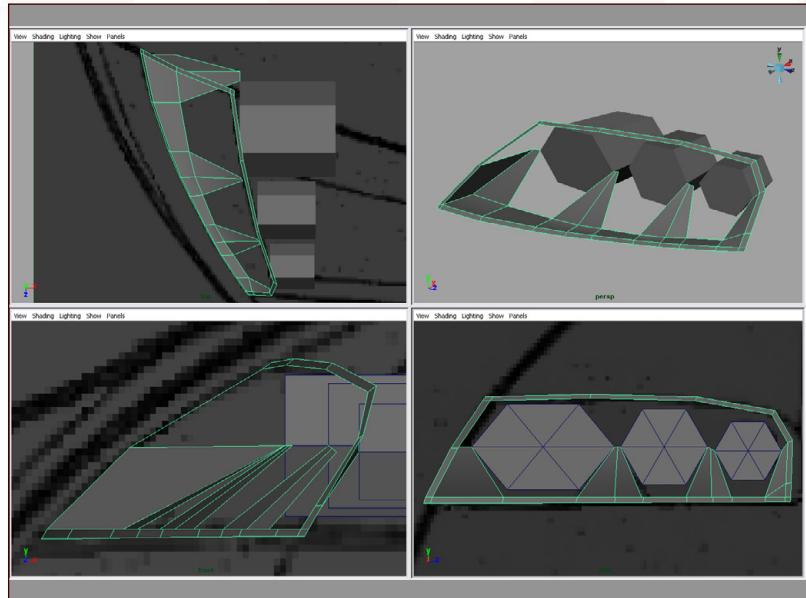
We are just trying to outline the lights at the moment; any bumps being created can be smoothed out afterwards. Fill in the gaps around the lights to create the upper surface and then extrude the openings backwards and bevel the edges (**Fig20**).

Fig 20
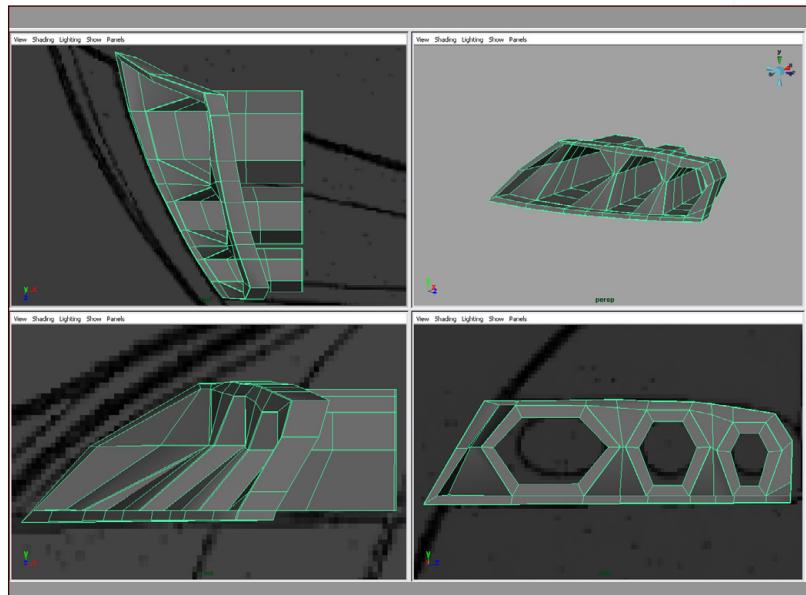
For the actual lights, just modify cylinders for both the casings and the light lens, and create the glass cover (just a modified box). **Fig21** shows how your Bugatti should be looking with the lights in place.

Fig 21
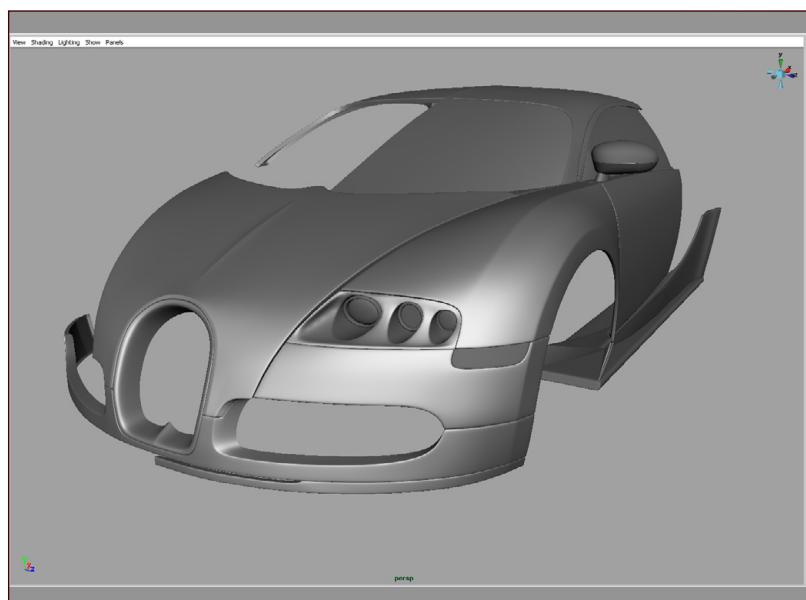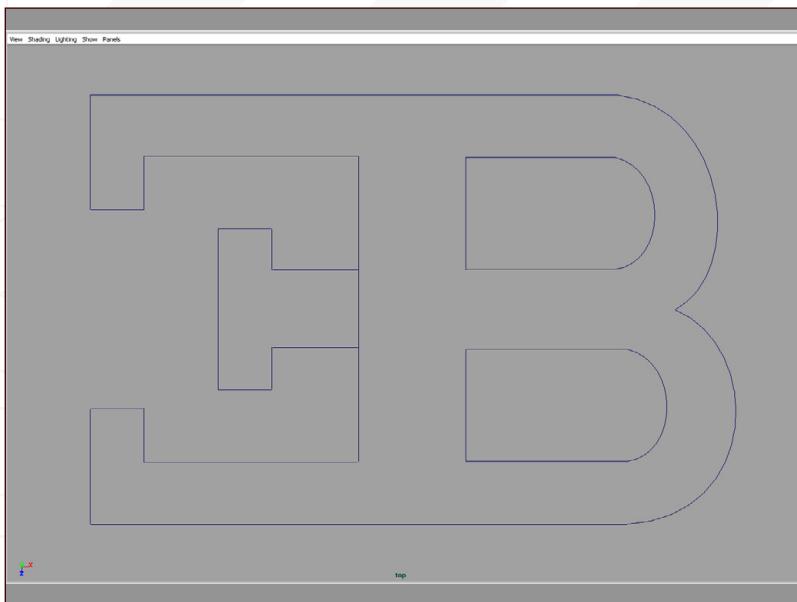
Fig 22

The last accessories we will create are the logos for the engine and the bodywork. These are very simple to create but take a bit of time. I'll show you how to create the EB logo and following the same technique you can model the other numbers/letters that appear on the car. We will begin by laying out splines in the top viewport that trace the outline of the letters 'EB' (**Fig22**).
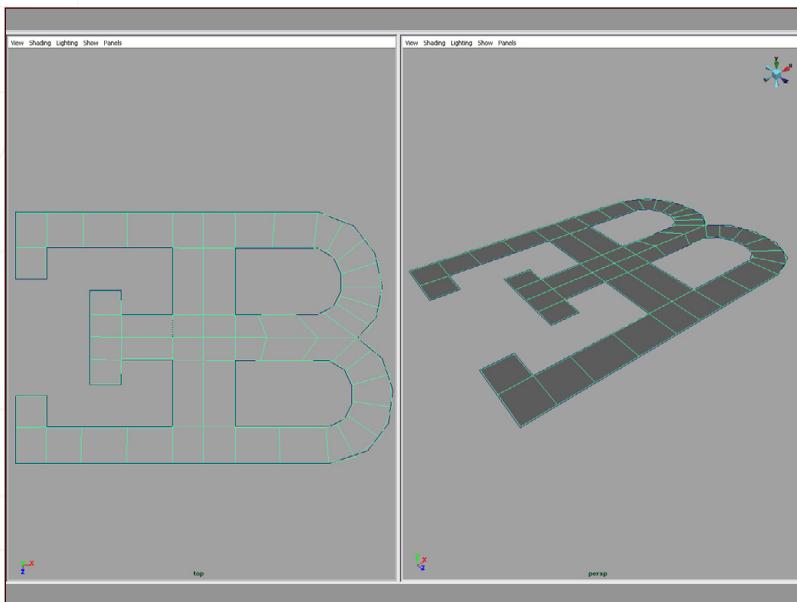
Fig 23

Fill in the logo by creating polygons using curve snapping (**Fig23**). We will extrude twice more to finish this piece. Select all of the outer edges and the inner parts of the 'B' and extrude downwards and then move it in the local Y axis a touch because the logo flares out and then goes down – this bit will need a bit of tidying up before the next extrusion.
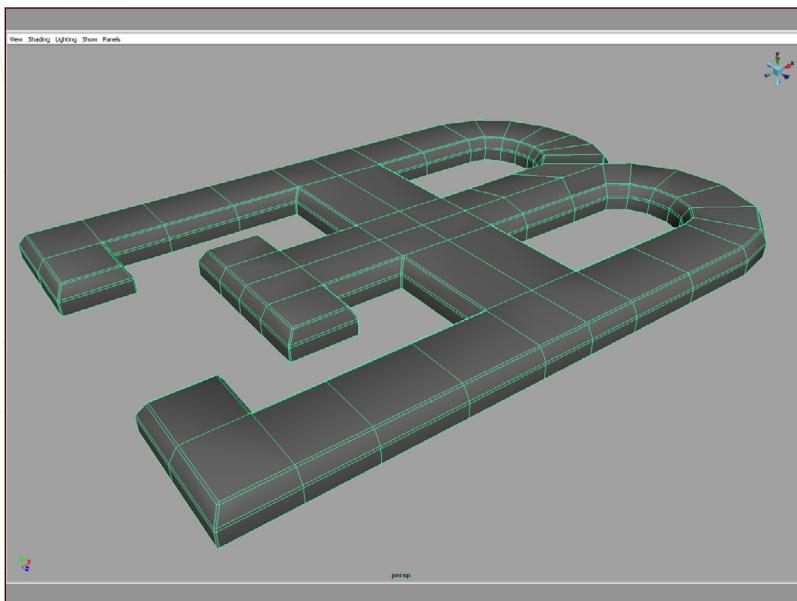
Fig 24

After you have extruded straight down for the second time, select the edges of the first extrude, the initial edges and the corners and bevel them (**Fig24**). The only place that should need any cleanup is the middle of the 'B' shape. Now it's just a case of positioning the logo in place and using however many Bend modifiers (found under "deform" and then "create non linear" in the animation section) as necessary to shape it into position (**Fig25**).

Fig 25

Fig 26

Fig 27
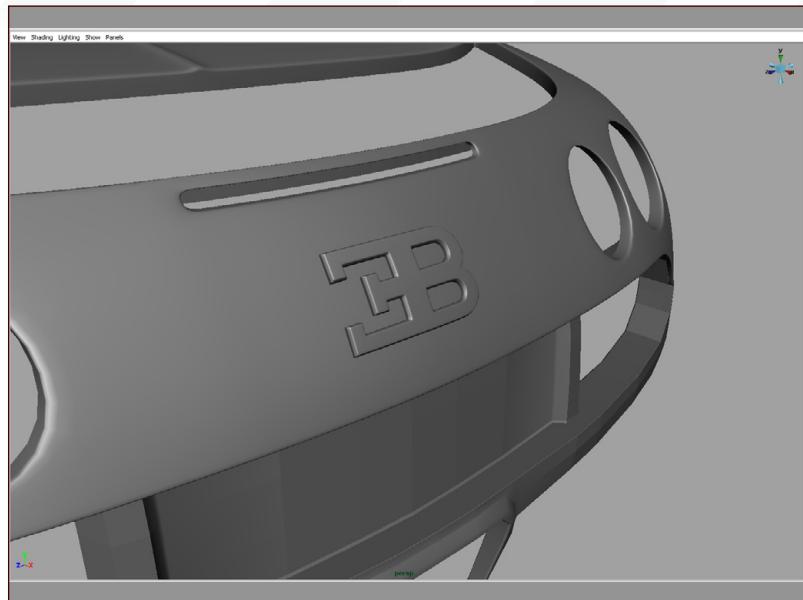
It's time to model the wheel now. We will begin with the rims and finish up with the tyre. The rims shouldn't be too difficult to model and if you study the rims you will notice a lot of symmetry is involved which makes our task of modelling them a whole lot easier. There are 12 spokes to each rim which alternate between a raised one and a slightly lower one, so we will model half of each type of spoke, then mirror it and rotate the duplicates into position.

Begin by creating a cylinder and lining it up with the centre of one of the rims in the blueprint – these will be fine as rough guidelines for our model. Give the cylinder a total of 24 subdivision axis, scale it to the diameter of the rim and then delete every face except for 2. We will create the spokes first and then model the outer rim. Add an edge loop by using the Split Polygon Tool with the number of magnets set to 2 – this should pretty much outline the inner part of the rim. Let's work on the top most spoke and then we'll work on the one that is slightly behind. I like to add a lot of guide curves – circles and EP curves – to help with snapping and keeping everything circular. So with that in mind, outline the upper spoke (**Fig26**) making sure to keep checking your smooth version especially when the first spoke has been duplicated and rotated to represent the other spokes.

We'll create the second spoke next and then we'll add in the curvature of the rims. I find it
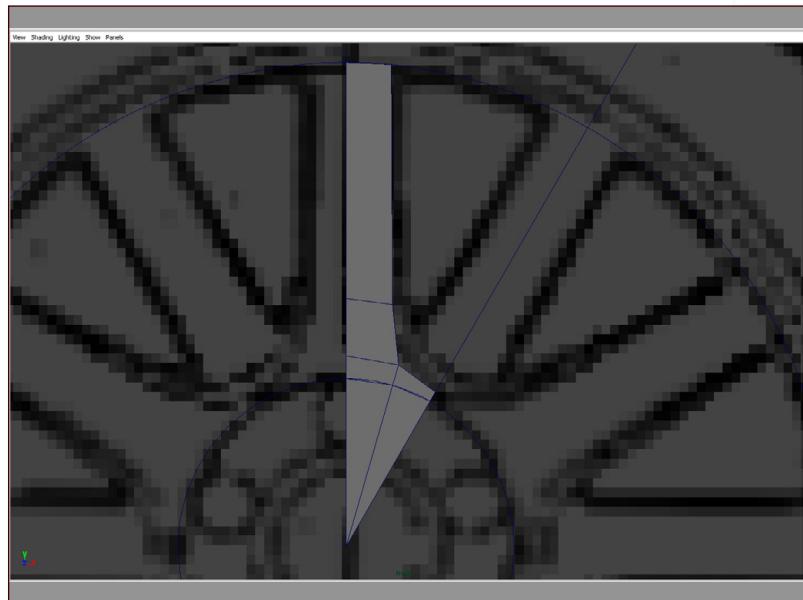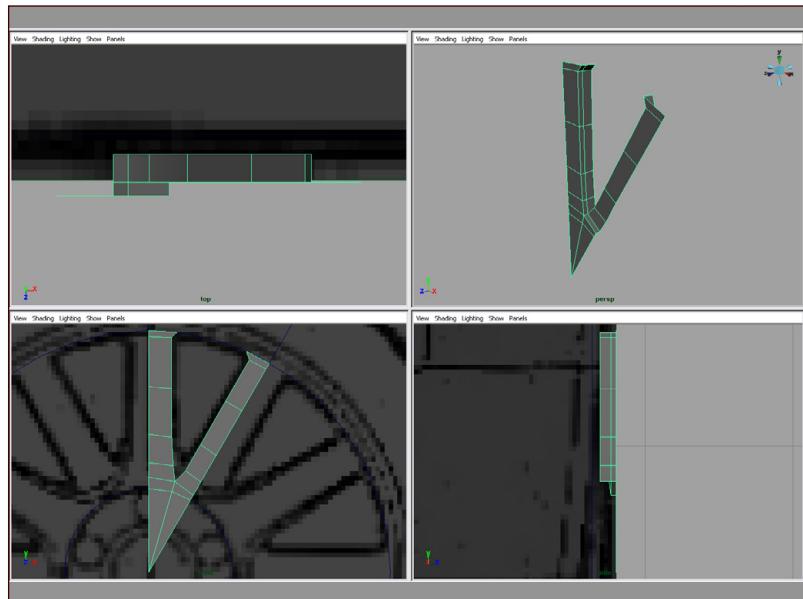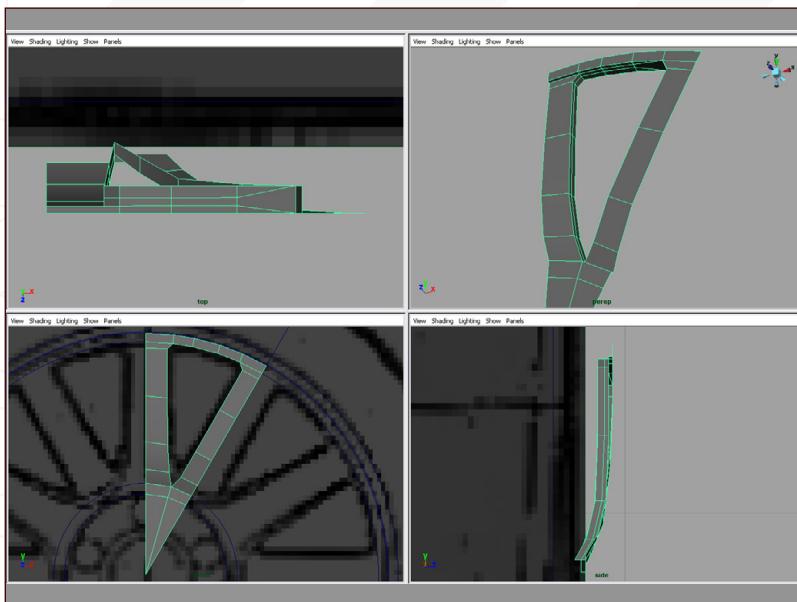
Fig 28

easier to create the rims flat and to then add the curvature because it saves you having to think about too many aspects at once. The second spoke actually sits a little bit behind the first, so extrude the edge backwards and then start extruding upwards (like how we did the first spoke) until you have the correct shape (**Fig27**).
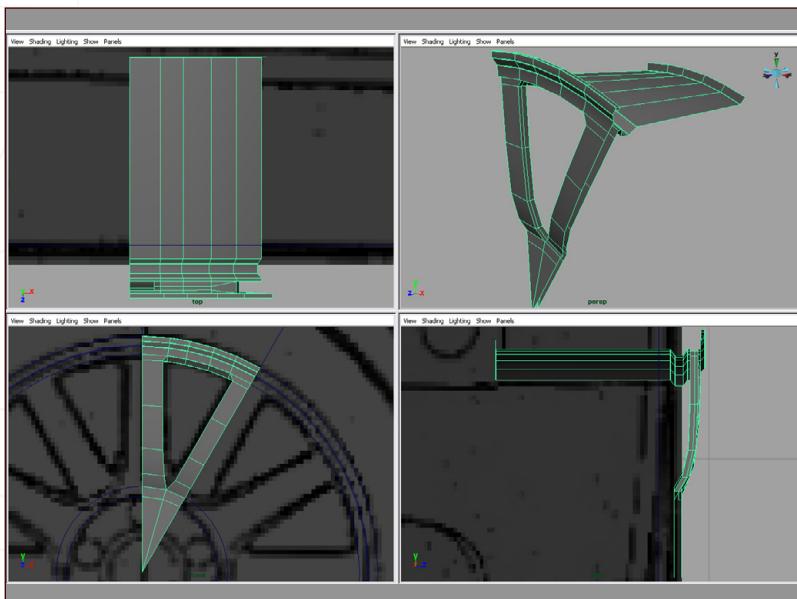
Once you are happy with how the spokes are looking it's time to add the curvature to them – note that the front spoke actually ends up curving back further than the back spoke. Now you can start filling in the top of the rim, using the nurbs circles as a guide (**Fig28**).

Fig 29

Trying to connect the two spokes up will inevitably lead to triangles due to the fact that one spoke was initially in front of the other and then ends up behind it the closer to the top of the rim we go. Just make sure that your triangles are kept to the back of the rim and they won't be noticed. Extrude a raised ridge just behind the spokes and then extrude all the way to the width of the tyre and then outwards a bit (this will be where the inside of the tyre sits). Make sure to model the inside of the rim around the spokes and down to the middle so that all edges will catch a nice highlight when bevelled. Now it's just a case of continuing to extrude the front part of the rim upwards and out a bit, followed by bevelling the edges that need bevels (**Fig29**).
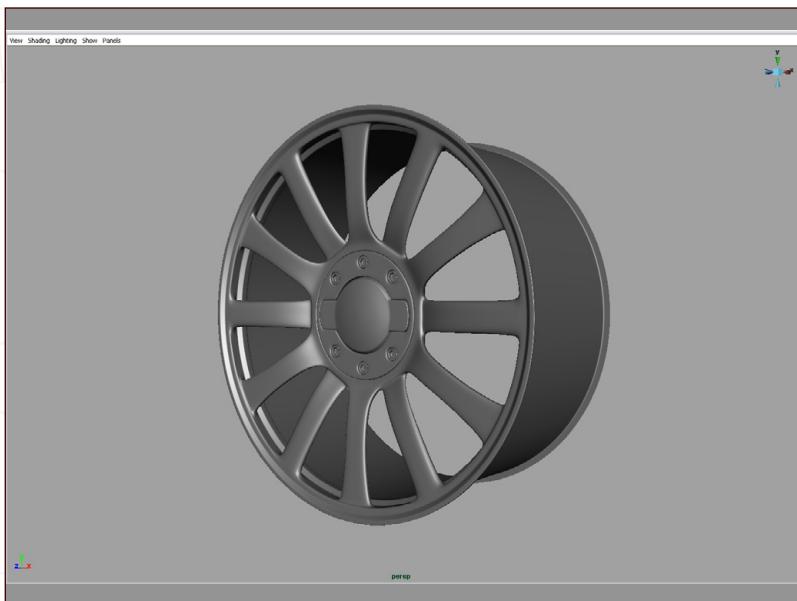
Fig 30

The next step involves cutting a hole in the middle and then we'll place a duplicated copy of the fuel cap inside the hole – as these objects are extremely similar it isn't worth wasting time modelling another object. The last thing to do is to mirror the object to create two complete spokes and then duplicate these objects a few times, rotate them into position and merge the verts together along the seams. **Fig30** shows the completed rim.

The tyres are next on our list. It's important to be aware that modelling tyres is extremely polygon intensive and will lead to some major lagging on most machines. So, to make Maya run as smoothly as possible, delete all history on your unsmoothed items once you are happy with them and place everything into a layer (or a number of layers, i.e. front panels, back panels, accessories etc) and hide all of your objects. I think probably the best and easiest way of creating the tyre tread is to model a small section and then duplicate it many, many times. This will create one long flat line of tread that you can then apply a bend to. So, let's begin by creating a plane with the rough width of the tyre but rather thin – you should be able to mentally imagine one section of the tyre by looking at pictures, look for repeating patterns. Tyres can be quite tricky so I would recommend cutting in the main bands that run the width of the tyre and then cutting in the detail on each raised section - ignore any connecting detail for now (**Fig31**) as we just want the main pattern.

Continue in this way until the whole of the tread pattern is modelled for one section (**Fig32**).

Add some curvature to both ends of the tread (**Fig33**) and then bevel the edges and corners – you may also need to add some anchor edges to keep the bevel to the required sharpness.

Fig 31
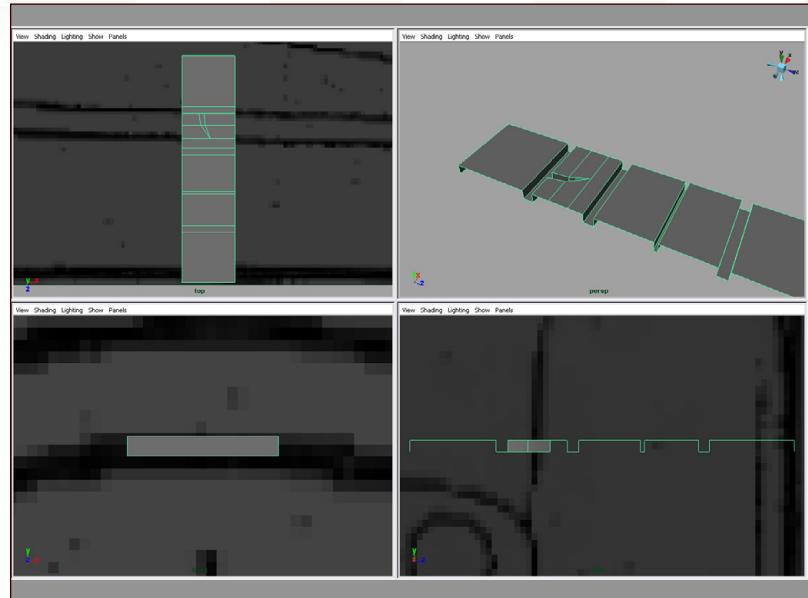
Fig 32
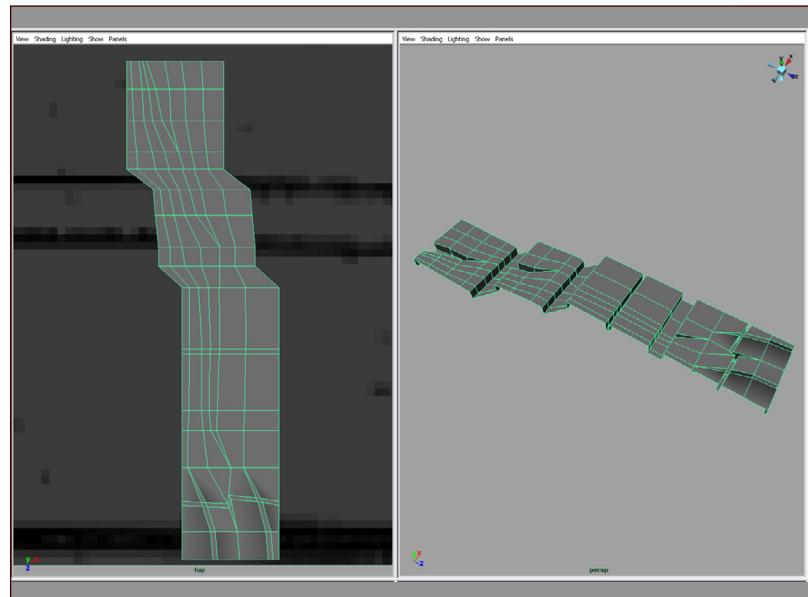
Fig 33
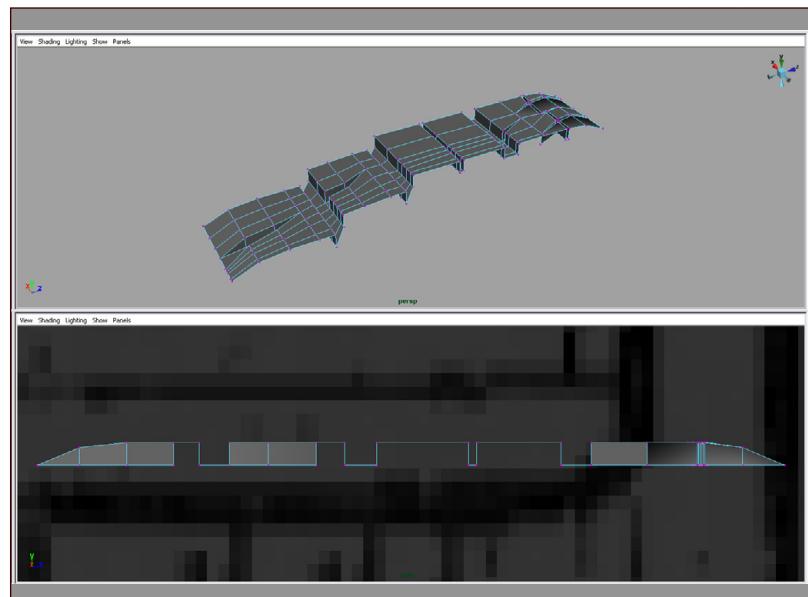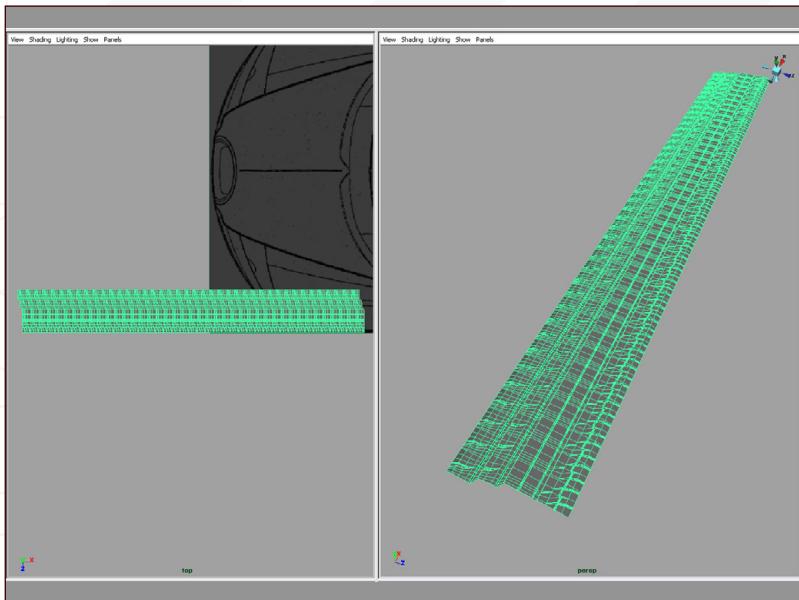
Fig 34

Now that you have one completed section of tread it is time to duplicate a lot of copies to create one long line of tyre tread. Using 'shift + d', along with the Move tool, create duplicates which are evenly spaced. Try to get each section's edges as close to the previous edges as possible to make your life easier when merging – **Fig34** shows the strip of tread.
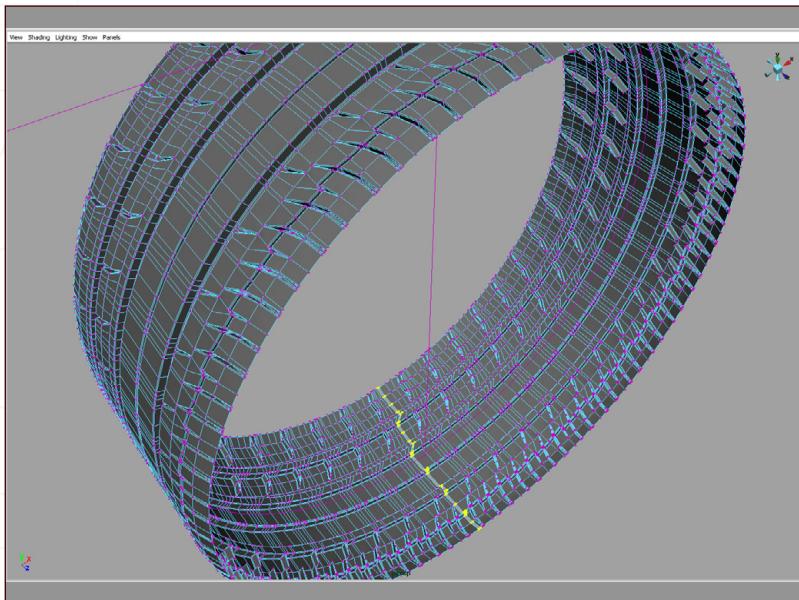
Fig 35

I ended up with a total of 41 sections, but yours may well be a different amount. This strip needs to be combined into one object and merged together (which is why the edges needed to be as close as possible) using as low a setting as required. Make sure to keep an eye on all parts of your mesh in case you accidentally merge your bevelled verts together (note, you may need to do this merging manually if you cannot find that "magic" merge threshold number). To bend this strip into a tyre shape, select the tyre and apply a Bend modifier. Rotate the Bend gizmo so that it lays flat along the tyre (in the Z axis in my case) and then slowly increase the curvature until the two end edges meet (**Fig35**). Merge the verts together and delete history on the tyre.
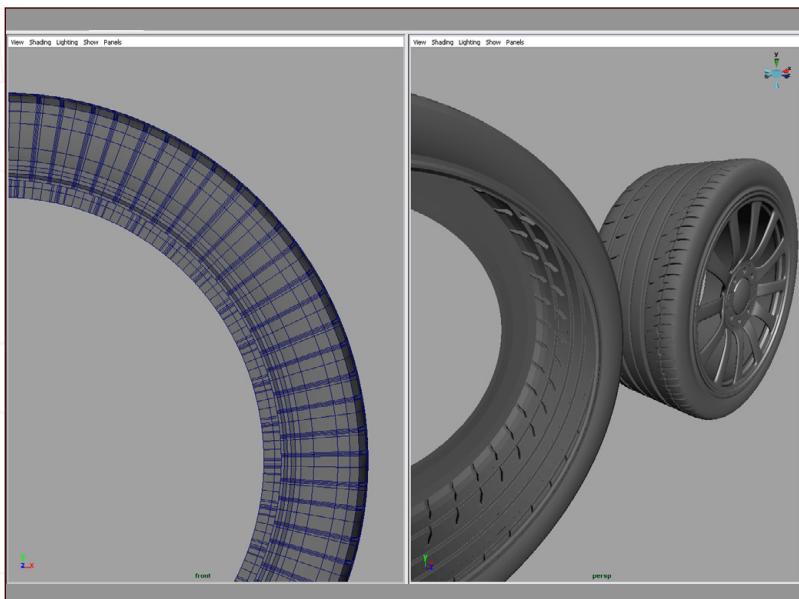
Fig 36

Creating the front and back sidewalls is a relatively painless process. Simply extrude the edges inwards to the rim and then add rings of detail to create the curvature of the sidewall – **Fig36** shows both a smooth and unsmooth version. Now it's just a case of grouping the tyre and rim together and duplicating copies to create the other wheels. Beware though because this will cause major slow down when you smooth all 4 wheels, so save often and make use of your layers.

The final thing to do is to mirror and merge all relevant objects. Duplicate the wheels and move a set to the back. Then that's pretty much it for the accessories, so I'll leave it there for this part. I'm bound to have missed some accessories out, but that happens and hopefully I'll be able to address them next issue. Though you should have sufficient knowledge now to fill in any gaps in the model yourselves. Next month we will be looking at how to add an interior to our car model, so I'll leave you with some pictures of how your car should be looking at this point (**Fig37** & **Fig38**) and I'll see you next month.
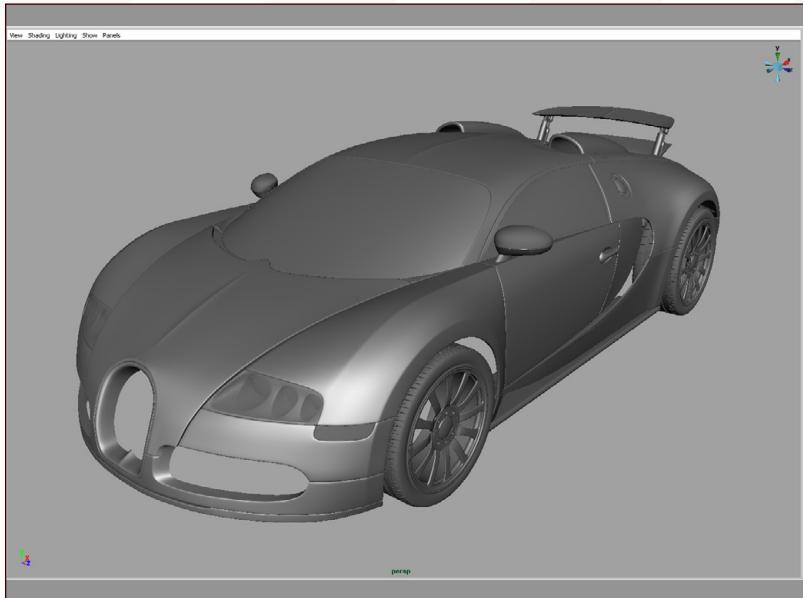
BUGATTI VEYRON
PART 4 - WHEELS, TYRES & RIMS

Tutorial by:

ANDREW HOBSON

For more from this artist, contact them:

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Fig 37

Fig 38
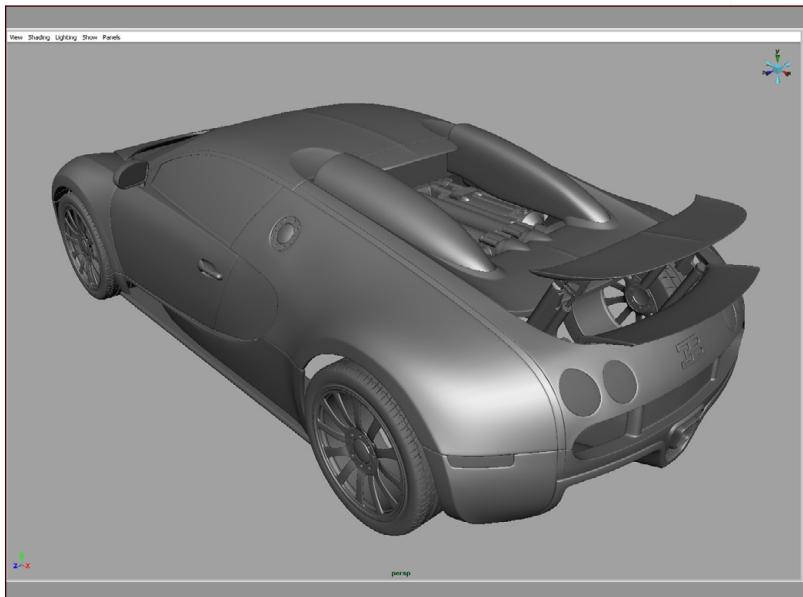
Bugatti Veyron
car modelling series

SOFTIMAGE®|XSI

The series will cover an in-depth and comprehensive guide to modelling the amazing Bugatti Veyron car, from start to finish, and will focus on the key techniques and stages involved in building the chassis, as well as details such as the windows, lights, vents, petrol caps, engine parts and so on. We will then move on to creating the wheels, including tyres and hubcaps, before going on to building and incorporating an interior, namely the dashboard and seating. The series will proceed with a section on creating and applying materials for the numerous parts of the car, such as the paint work, chrome, rubber and glass, before concluding with a tutorial devoted to setting the scene for a finished render. The final part will cover the importance of a good lighting rig and light parameters, as well as the importance of a camera and the integral part that the rendering settings play in showcasing the model for a portfolio.

This series aims to show a comprehensive guide to creating a finished car for people new to this type of exercise, but is not suitable for beginners who are not familiar with using 3D software. The tutorials do not detail every single step of adding individual edge loops and vertices, but does endeavour to outline each important stage and explain the crucial techniques necessary to following the exercise.

The schedule is as follows:

Issue 029 January 2008
Modelling the Chassis - Basics

Issue 030 February 2008
Modelling the Chassis - Details

Issue 031 March 2008
Lights, Radiator Grill & Vents

Issue 032 April 2008
Wheels, Tyres & Rims

Issue 033 May 2008
Interior

Issue 034 June 2008
The Materials & Finishes

Issue 035 July 2008
Lighting Set up & Render

Enjoy ...

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Blueprints available here:
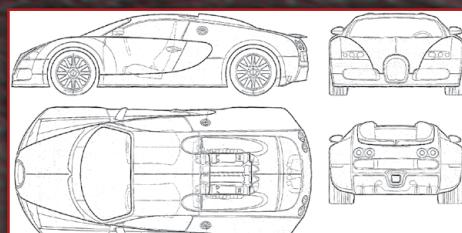
www.the-blueprints.com

BUGATTI VEYRON
PART 4 - WHEELS, TYRES & RIMS

Welcome to the fourth part of this car model
ling series. This month, we'll take a look a
t how you can model the wheels, and the car's ac
cessories. This will include modelling the tyres
and hub caps, too. Let's start! Before we
start with the wheel, make the wheel case. Don't f
orget the air inlets! (**Fig01**).

Fig 01
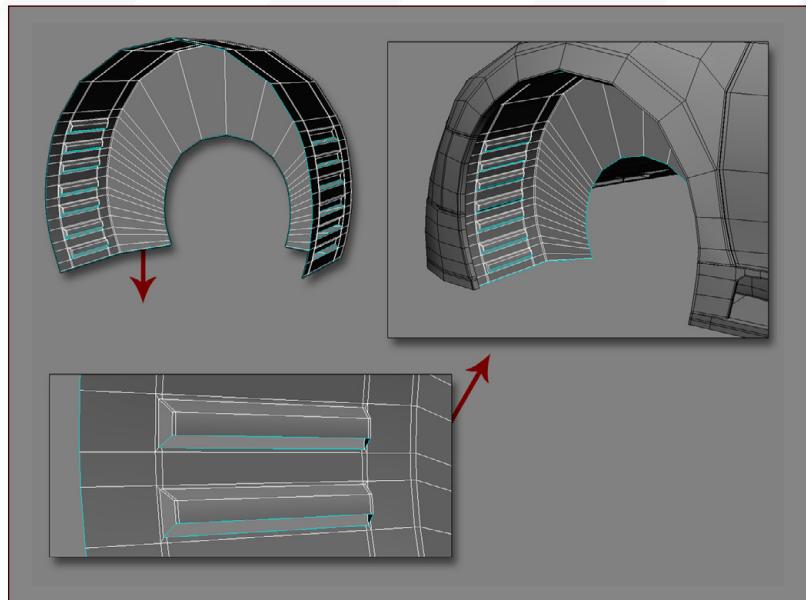
Let's prepare the back wheel case by using the
front wheel case as an example (**Fig02**).

Fig 02
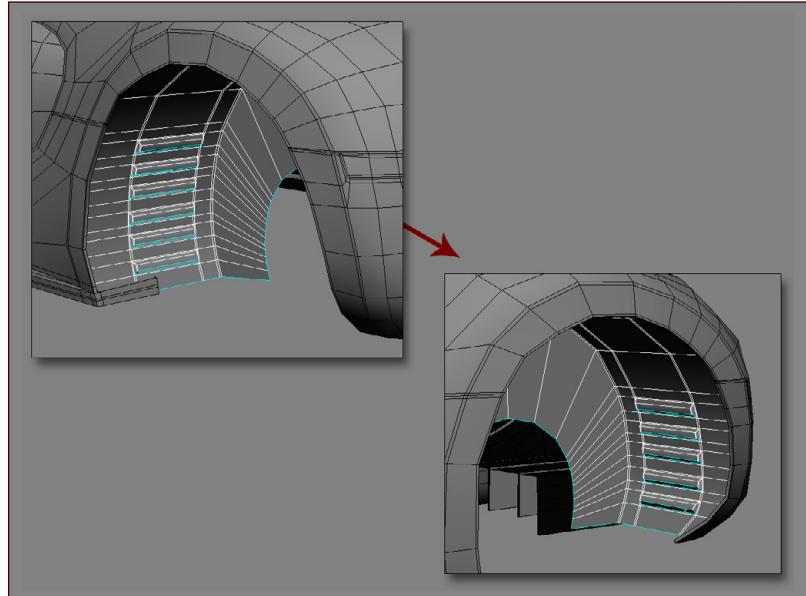
Now let's move on to making the bottom of the
car. Because it's not visible, it's enough to make
a simple shape to hide the missing inner parts
(**Fig03**).

Fig 03
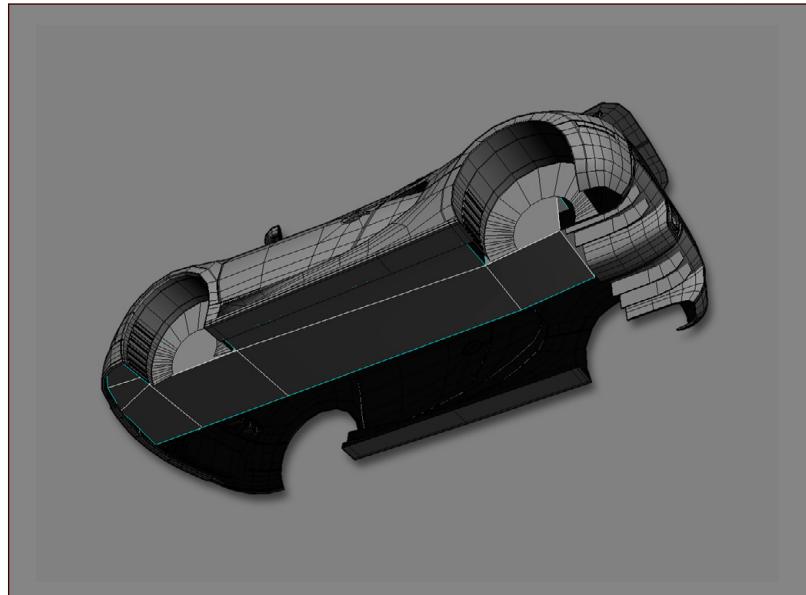
Fig 04

The hub cap is next. Take a reference photo of a tyre into the viewport. Look at the image and make a sector from the cylinder, then make the contour of the spoke (**Fig04**).
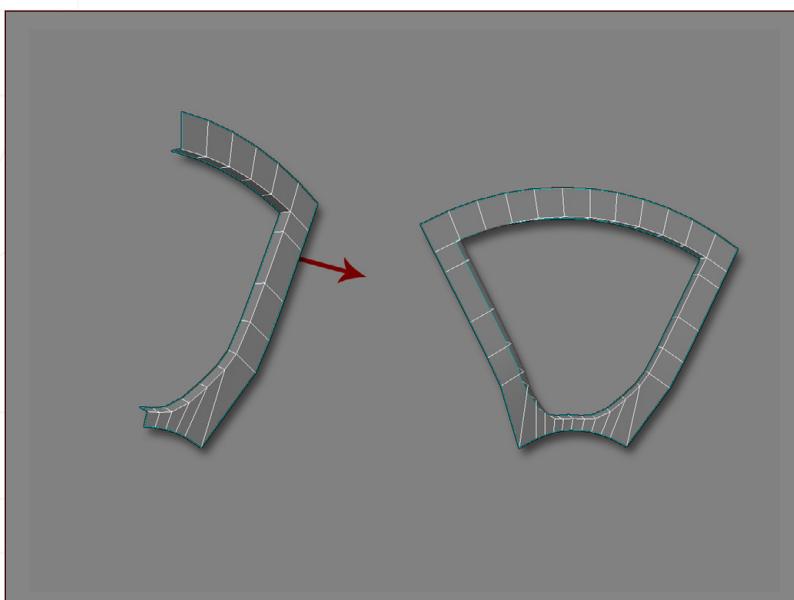
Fig 05

Add some details to it and use the Symmetrize Polygons tool (**Fig05**).
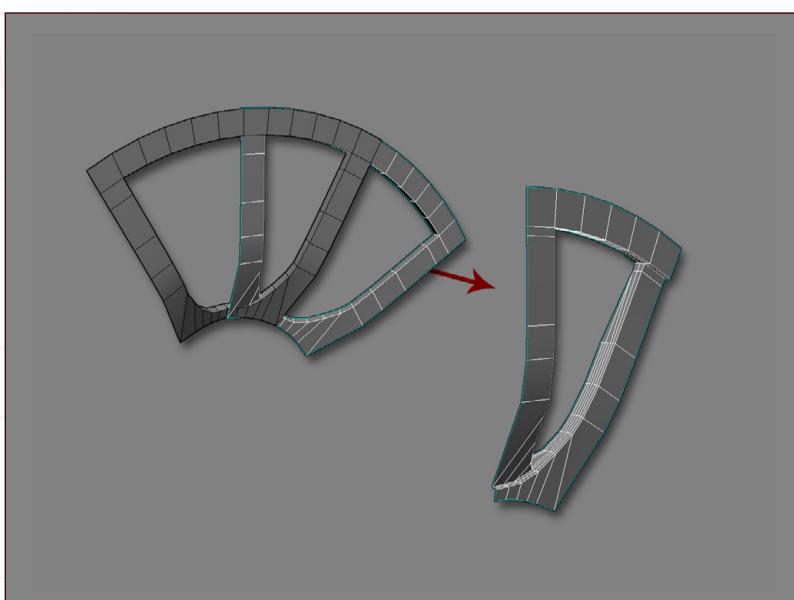
Fig 06

Duplicate it, rotate the two spokes, then delete the unecessary parts and merge them together (**Fig06**).

Add some more details to the spoke (**Fig07**).
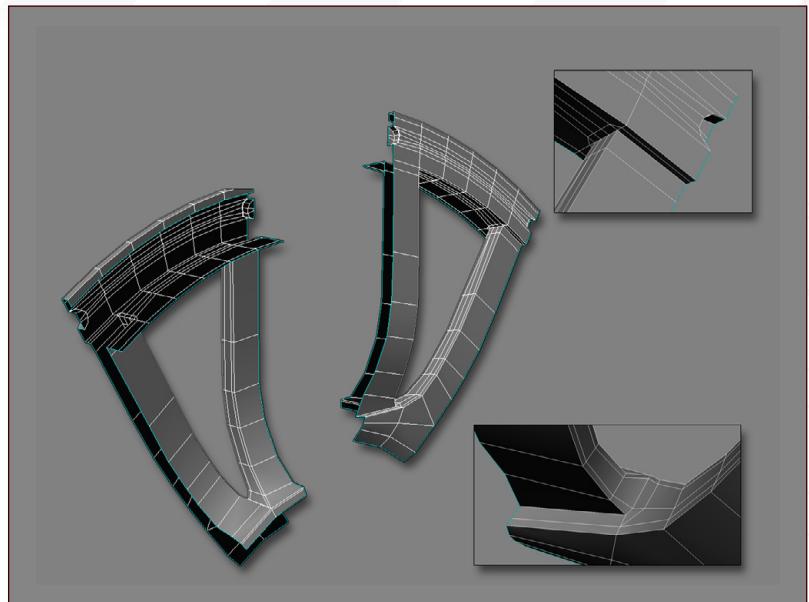
Make the spoke complete by using the Symmetrize Polygons, Duplicate and Rotate options. After that, merge it together (**Fig08**).

Fig 08
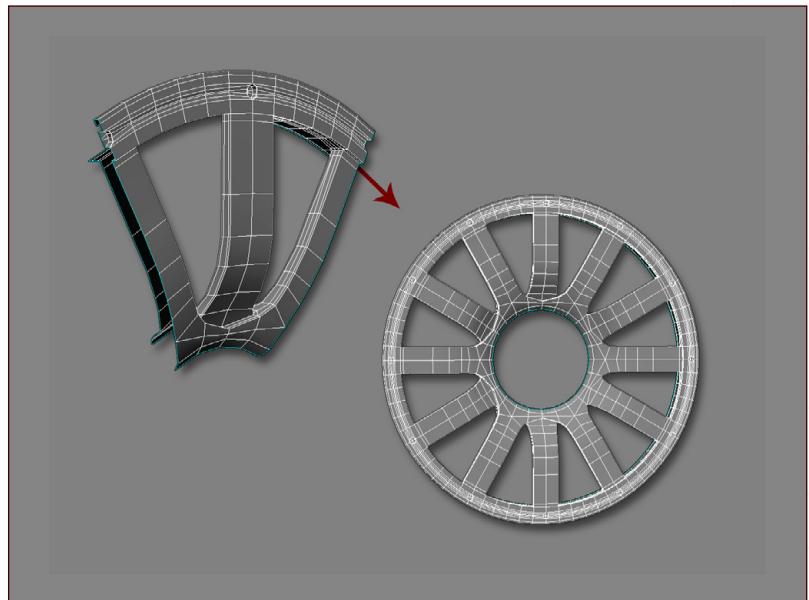
Add more details to the spoke (**Fig09**).

Fig 09
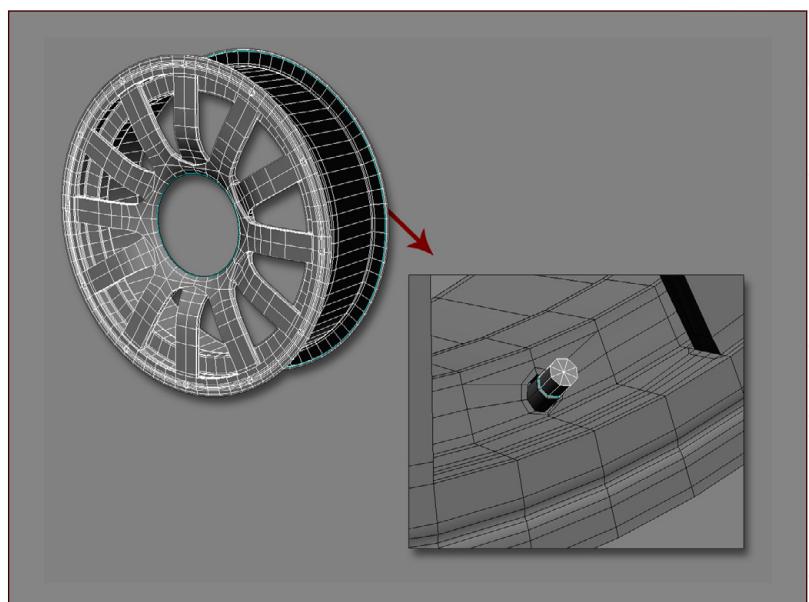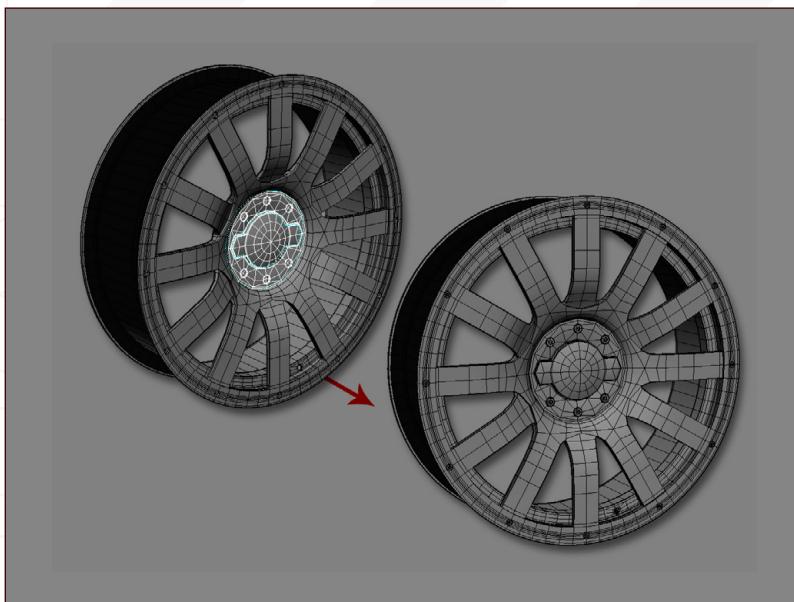
Fig 10

The easiest way to make the centre of the hub cap is to use the existing fuel cap. Next, add some screws and the hub cap is ready (**Fig10**).
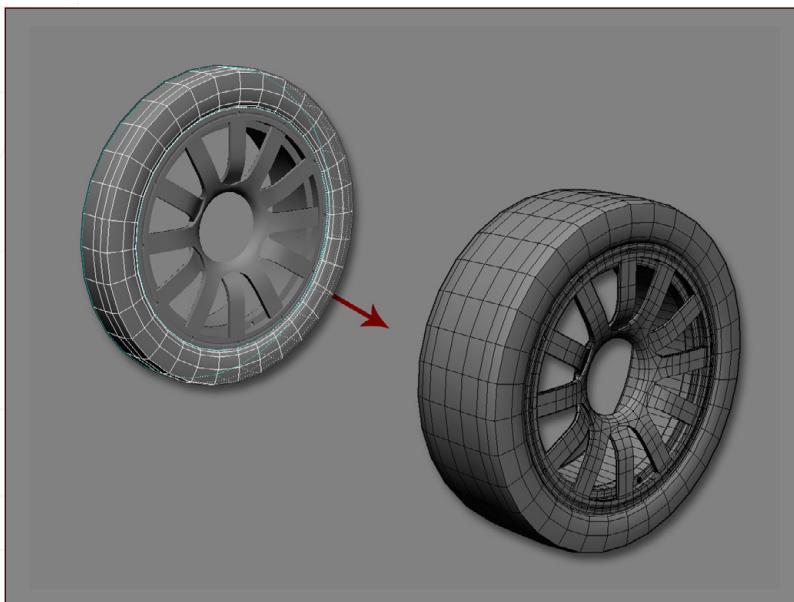
Fig 11

Now let's make the tyre. We could make this from geometry, but a better method would be to use simple geometry along with bump or displacement maps.

The bump and displacement methods will be shown in the texturing part. Let's make a simple geometry at this stage (**Fig11**).
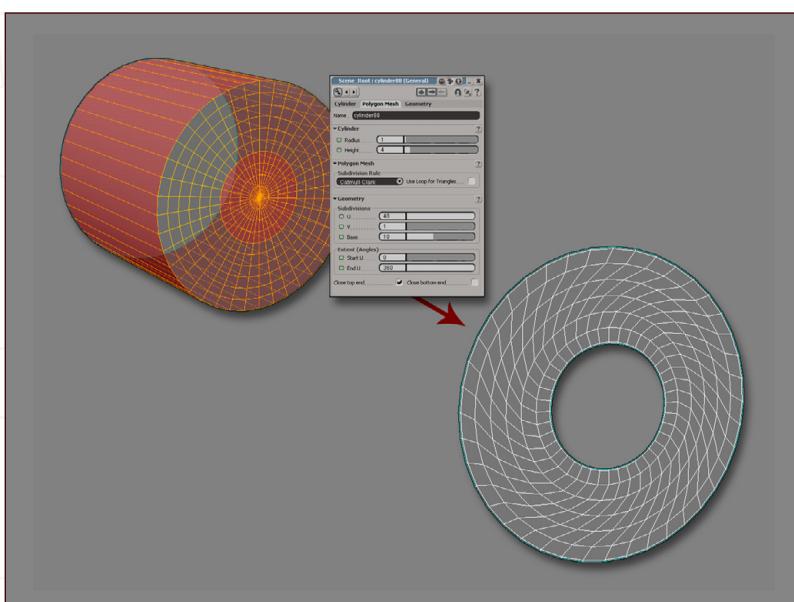
Fig 12

Next is the brake disk. Prepare the brake disk case by setting out a cylinder, deleting the side's polygons, adding some details, and rotating the inner edges (**Fig12**).

Delete the unneccessary polygons and make the little cylinders for the holes as its shown on the picture (**Fig13**).
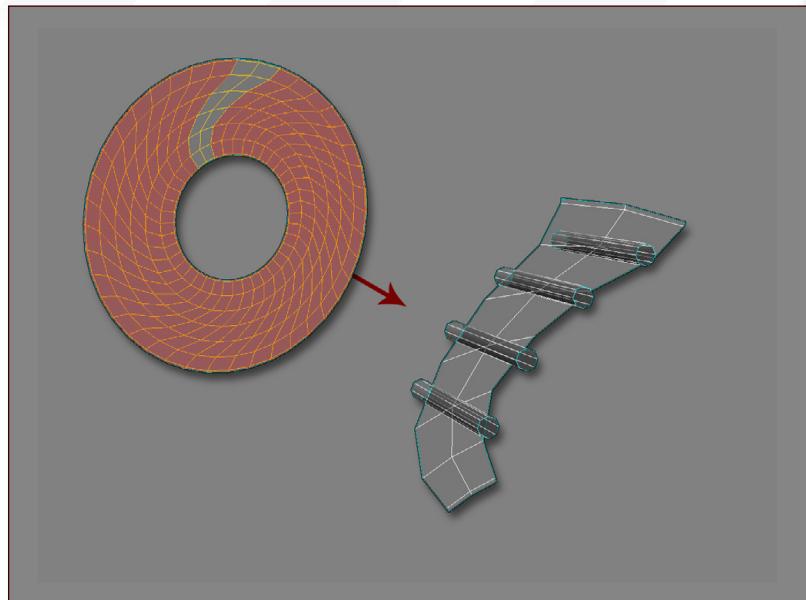
With the Difference tool (Model Module/Create/ Poly. Mesh/Boolean/) make the holes into the brake disk and add the details. Next, duplicate, rotate, merge and the half of the break wheel is ready (**Fig14**).
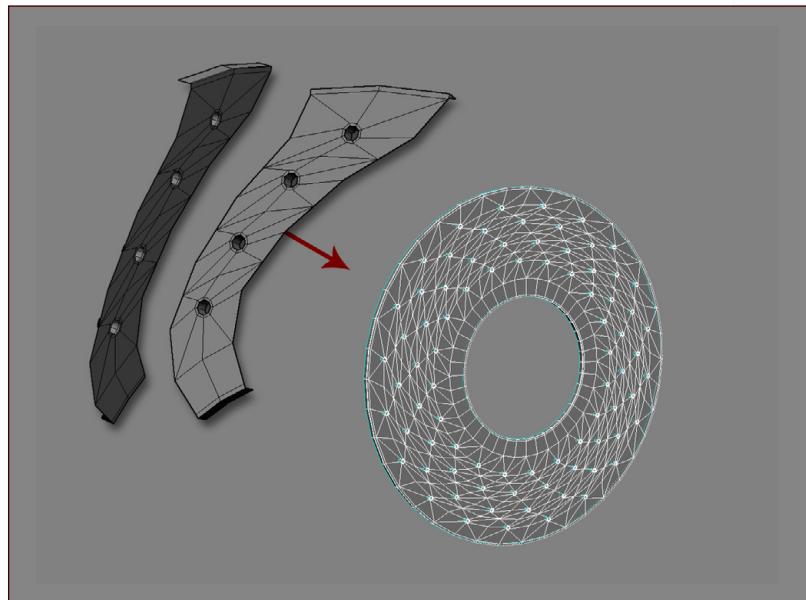
Make the brake disk's other side by using the symmetry tool. Duplicate this, move the wheel as I have on the images, and add some polygons between the wheels to make the little space there. Now the whole brake disk is finished (**Fig15**).
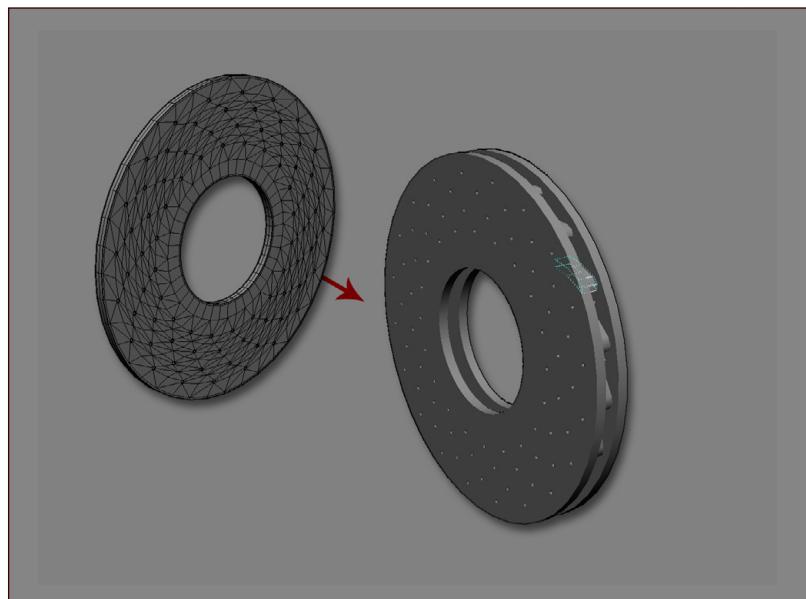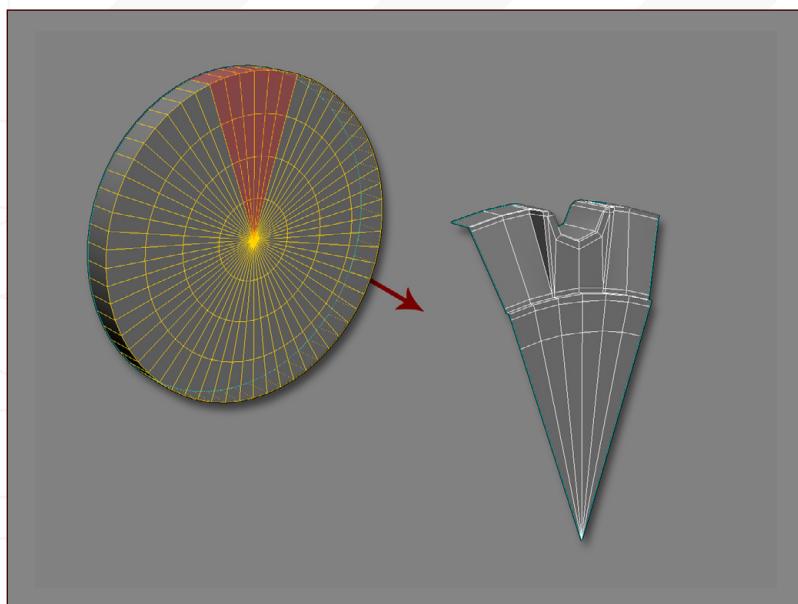
As we did with the brake disk, let's make it's holder. Start with a cylinder (**Fig16**).
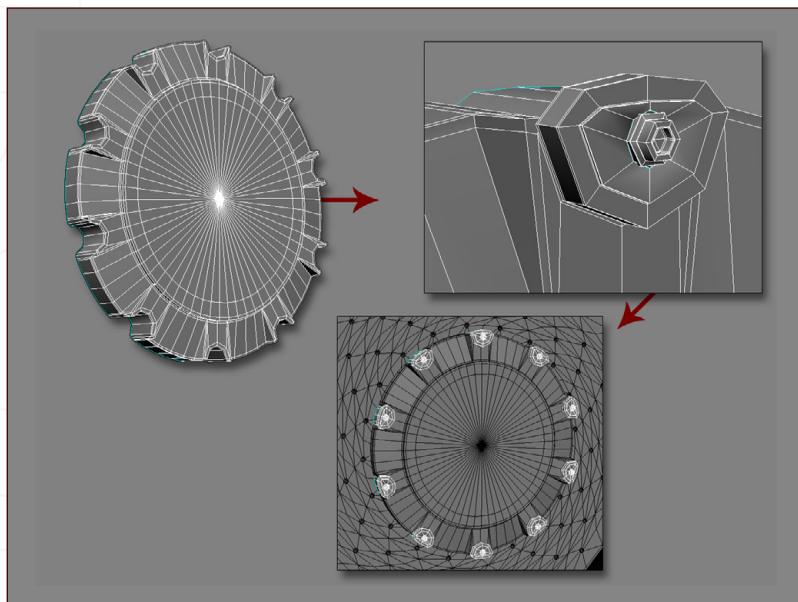
Duplicate and rotate the sector to make a whole wheel and then merge it together. Follow up by adding some screws to it (**Fig17**).
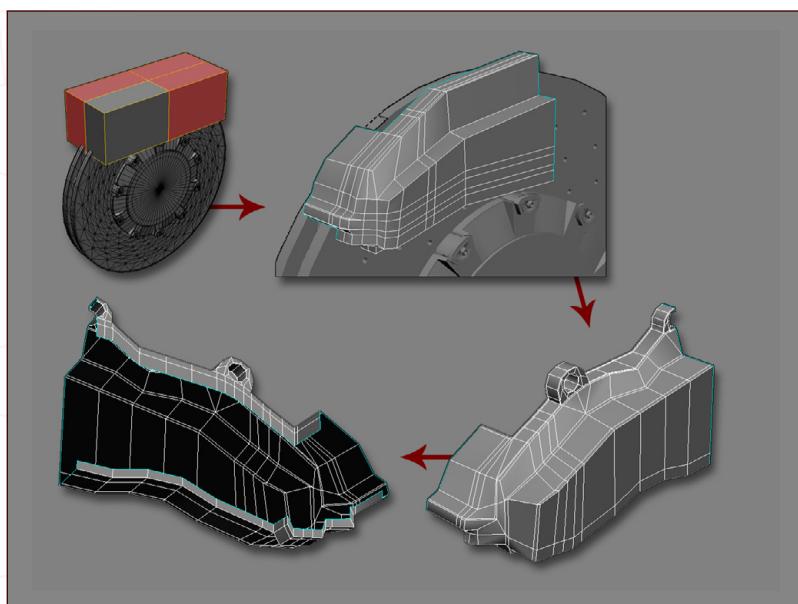
Next is the brake. Start out from a box and then we can add some details after that (**Fig18**).

Make the missing parts with the symmetry tool and add some accessories (**Fig19**).

Fig 19
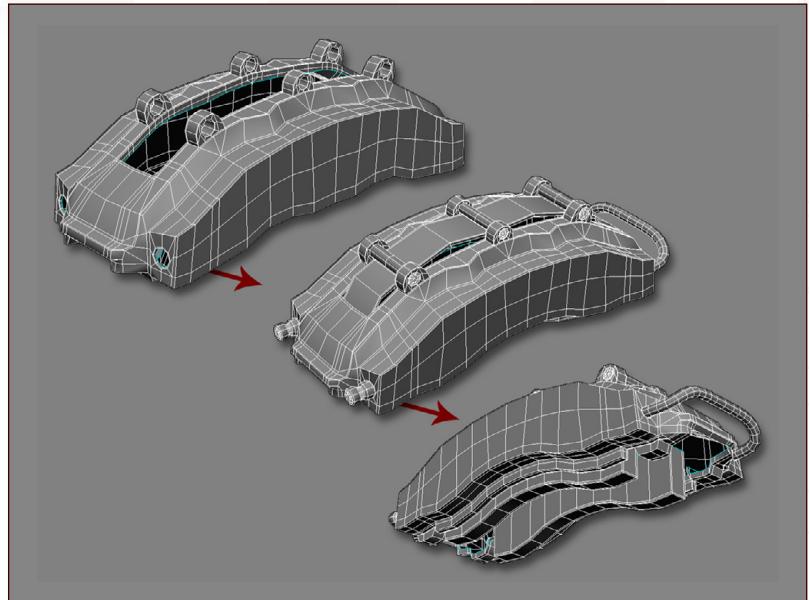
Look at the reference photos, then place and move the parts into the appropriate places to finish the front wheel. We can easily create the rear wheel by duplicating the front wheel, and the wheels on the other side by using the symmetry tool (**Fig20**).

Don't forget, the rear wheel is wider and bigger than the front one. The location of the brake system is also different in comparison to the front wheels.

Fig 20
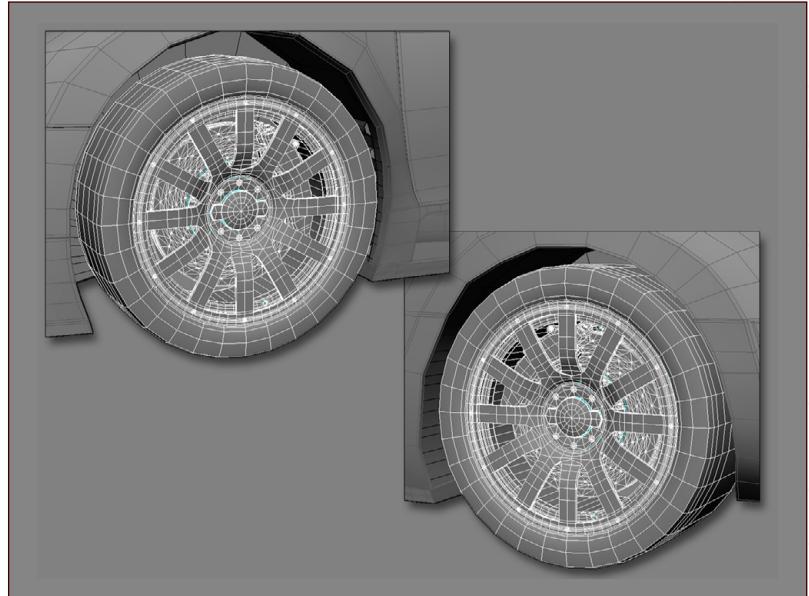
With this the wheel block is finished. If someone wants to make the tyre by geometry, the next steps could be useful for this.

Download some reference photos of a Michelin® Pilot® Sport front and rear tyre. This type was shown on many photos on the Veyron.

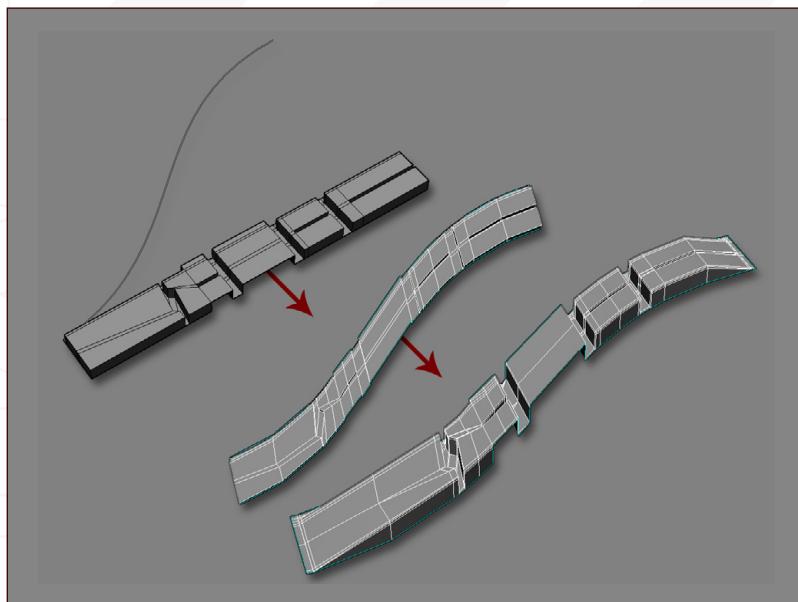Starting out with a grid, lets make a part of the marking (Fig21).

Fig 21
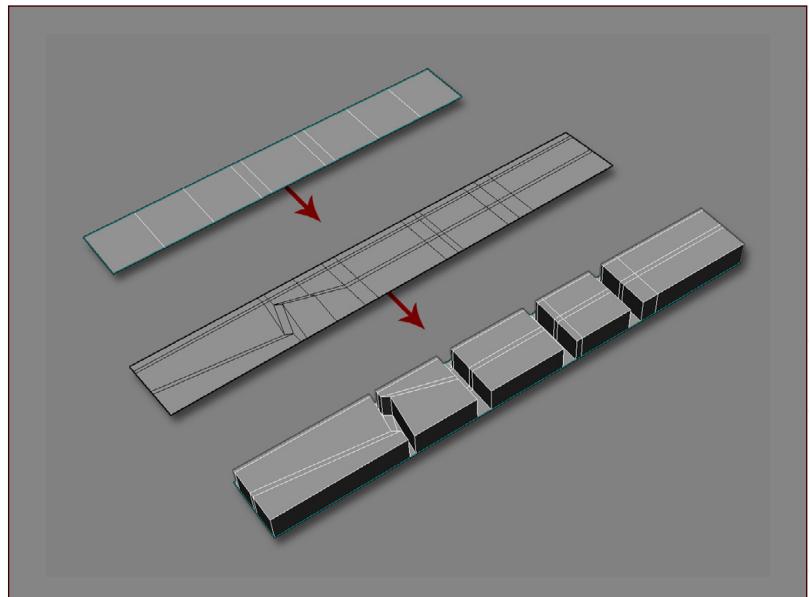
Fig 22

Next make a curve, which helps us to align this sector into an arc, and then add some details after that. Now the tyre tread's sector is ready (**Fig22**).
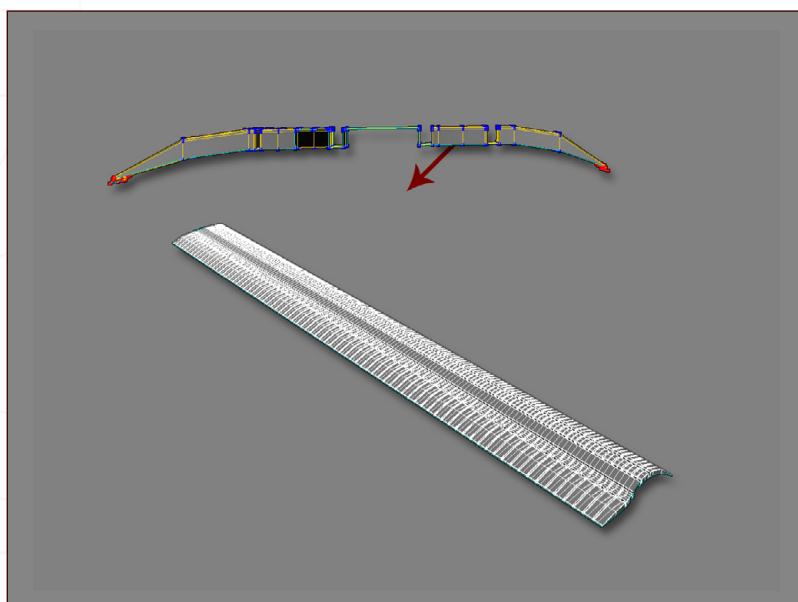

Fig 23

Move down the sector's border, freeze it, then duplicate it several more times. Finally, merge the pieces together (**Fig23**).
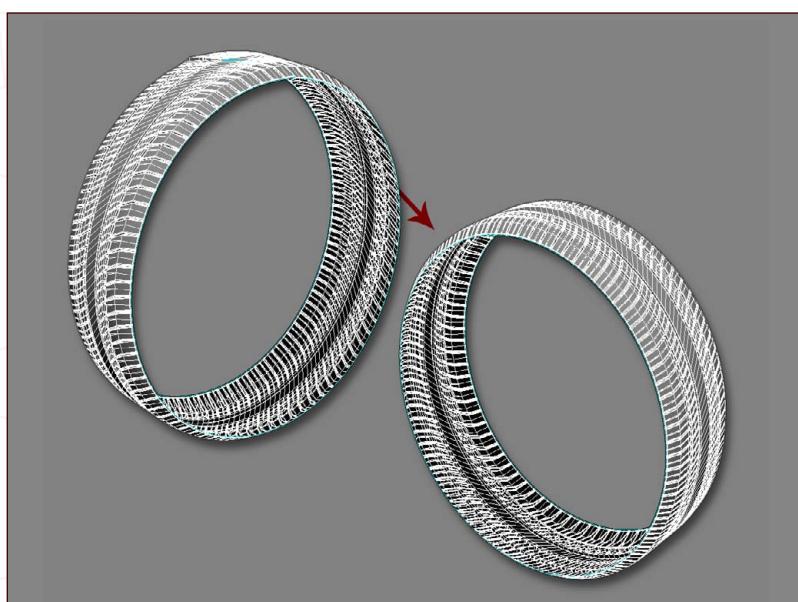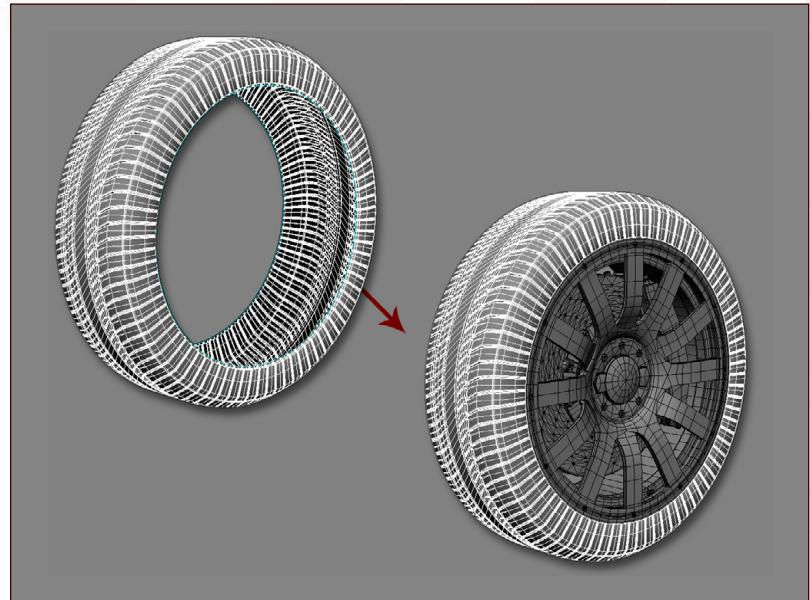

Fig 24

Add a Bend Modifier (Model Module/Modify/ Deform/) to it, which we use to bend the whole thing, so that it connects at the end. Repair the joint border manually (**Fig24**).

Extrude the border edge to create the tyre's side and fit the whole thing onto the hub cap (**Fig25**).

You can use the same steps to create the rear wheels.

Fig 25

Now let's move on to something more interesting, though not as easy to make. Prepare a rig for the movement of the rear wings.
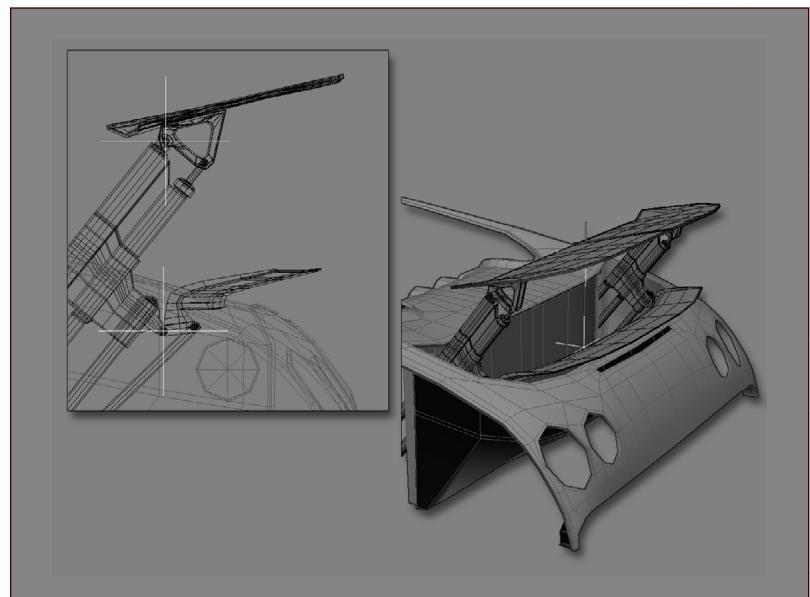
Let's hide everything for this; only the wings, their holders and the bodywork around them should be seen. You only want it to be possible to select the wing and it's parts (**Fig26**).

Fig 26
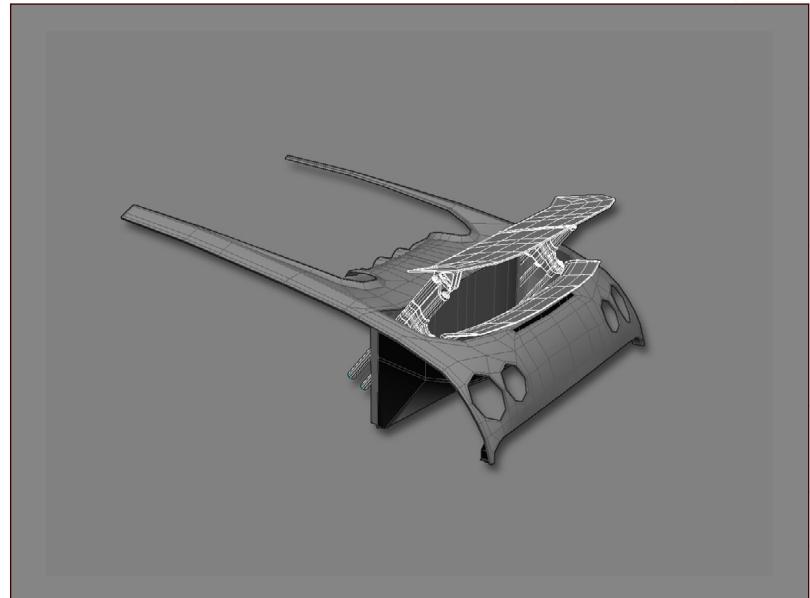
Create two nulls (Model Module/Get/Primitive/) and place them onto the main turning points (**Fig27**).
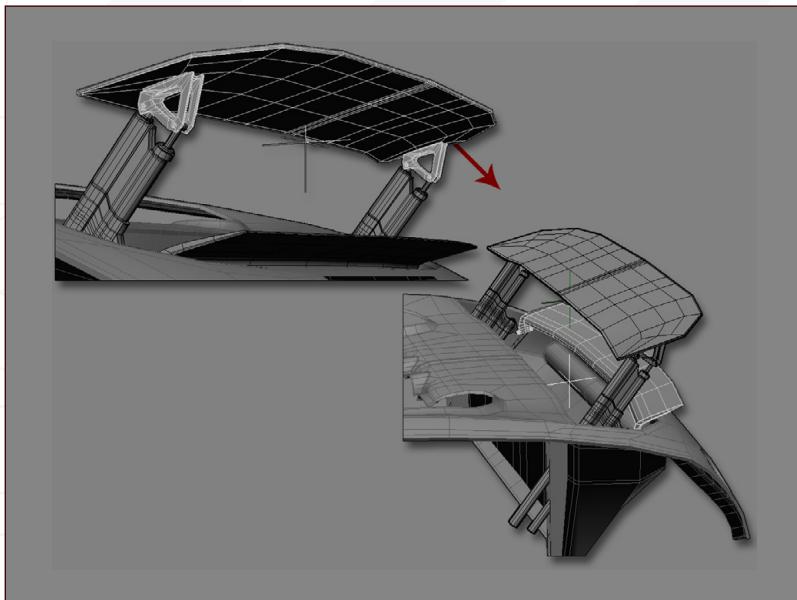
Fig 27

Fig 28

Now, parent the related elements together so that they can move together. First, parent (right side MCP menu/Constrain/) the upper wing, and its belongings to the upper null. Then parent the lower wing and it's parts to the lower null (**Fig28**).
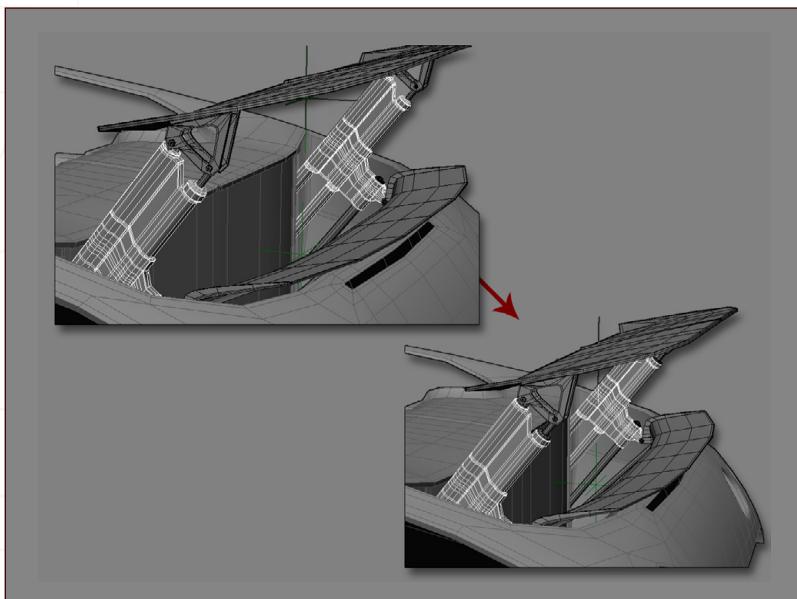

Fig 29

Finally, parent the main holder's accessories to the holder. Let's connect the capital holder to the upper null with Position Constrain (MCP menu/Constrain/).

We're going to jump away at this point, but don't be afraid. Switch on the CnsComp (MCP panel/Constrain/) and in the Transform menu (MCP panel) set translation to zero. In this manner the capital holder moves together with the upper wing, but doesn't turn with it when we turn the wing with the null (**Fig29**).

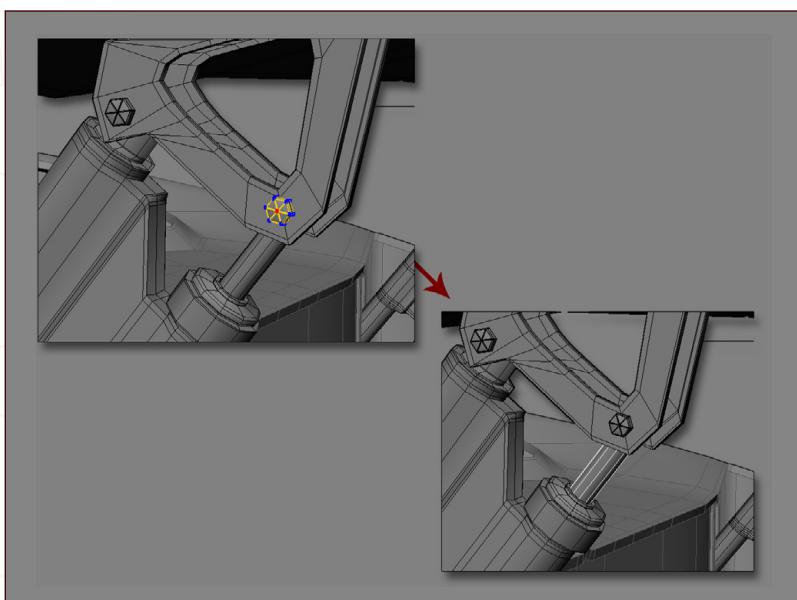Now, connect the turning arms to the wings.

Fig 30

The simplest way to do this is if we make a cluster from the screw's middle. Select the centre of the screws and push the cluster button (MCP menu/Edit).

Select the turning arm and connect it to the cluster with Object to Cluster (MCP menü/ Constrain/) (**Fig30**).

Be careful, you need the CnsComp and the Translation on zero again!

Follow exactly the same steps with the lower turning arm. The only difference is that this time you only connect the lower null to the upper null (**Fig31**).

Fig 31
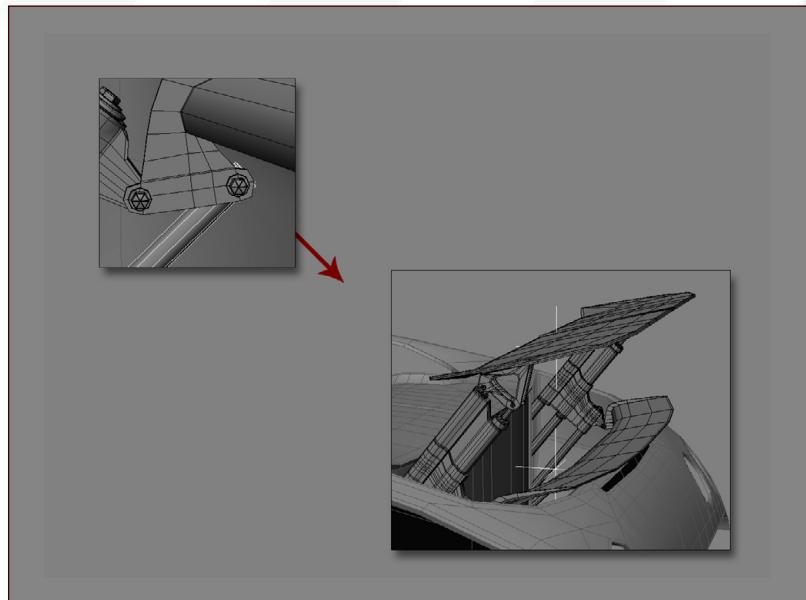
In this manner we can move the whole system with the upper null, but if we rotate the upper null it only rotates the upper wing and if we rotate the lower null it only rotates the lower wing (**Fig32**).

With the help of New Custom Parameter and Parameter Connection Editors we can also add easy controlling. You can similarly prepare the wheels, the doors etc.

Well we've reached the end of the fourth part of this tutorial and we've finished the car's exterior **(Fig33)**.

It's always worth going back over everything we've covered one more time, just to check that everything's correct and to repair things where it's necessary.

Fig 32

I hope you found this tutorial interesting and useful. Next time I'll be showing you how to make the interior and we'll also be fitting the inside to the chassis mesh. See you next time!

BUGATTI VEYRON
PART 4: WHEELS, TYRES & RIMS

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Or contact them:

szkoryon@gmail.com

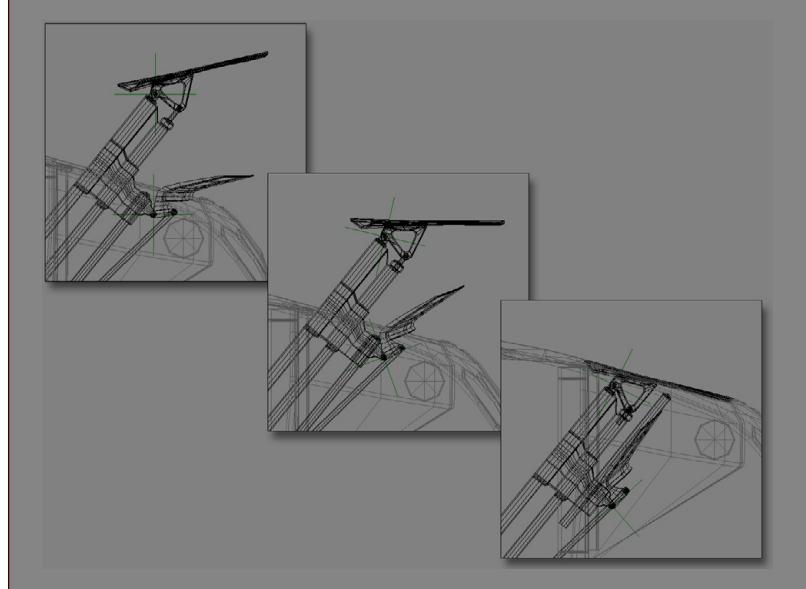Fig 33